FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Poultry Marketing Orders Mentioned in Farm Plan Hearings

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — When Congressional hearings on the "Cochrane-Freeman" omnibus farm bill were opened here this week before the House Agriculture Committee, testimony and examination of Secretary Freeman by the committee was heavily weighted by the obvious political aspects of the measure which calls for individual commodity programs and has been tagged as a "do-it-yourself" project.

Of major significance were remarks by the secretary on the possibility of poultry marketing orders.

Willard Cochrane, U.S. Department of Agriculture economic director, was noticeably absent when Secretary Freeman appeared. Observers attributed this fact to Dr. Cochrane's faux pas before the Senate Agriculture Committee when he flatly stated to that committee that he intended to sell corn to break the open market price and force corn producers into his new support and acreage allotment program. Dr. Cochrane appears to have been forced from the spotlight and into the wings, nevertheless he still remains the author of the omnibus measure which must rightfully be described

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FEEDSTUFFS *Features This Week*

POULTRY NUTRITION—Dr. J. R. Couch reports on the 1961 Informal Poultry Nutrition Conference beginning on **page 10.**

PUBLIC RELATIONS—AFMA's public relations director tells of this factor which works for or against a firm 24 hours per day. **Page 18.**

AMINO ACID BALANCE—The subject of amino acid balance in improving efficiency of egg production is discussed on **page 34.**

SOUTHERN HOG FEEDING—A southern hog feeding experiment catches poultrymen's interest. **Page 38.**

POULTRY SERVICE—A Massachusetts feed man tells how he gives management tips for egg profits. **Page 58.**

VOLUME DOUBLES—A new mill has doubled an Ohio firm's custom mix sales. **Page 64.**

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Feed Men Told: 'Make Drug Problems Work for You and Not Against You'

By GEORGE L. GATES
Editor of Feedstuffs

SAN FRANCISCO—"I think the time has come for you to stop grousing about feed additive problems you face with government and turn these problems over to your trade associations—then turn to and make your drug problems work for you, not against you."

This advice was given members of the California Hay, Grain & Feed Dealers Assn. at the organization's convention April 20 by Allen Baker, supervisor of the grain and chemical division for the Washington State Department of Agriculture.

Mr. Baker said he believes the feed industry is missing the boat on:

- Convincing the farmer of feed additive effectiveness when properly used.
- Explaining to the farmer the dan-

(Turn to DRUG PROBLEMS, page 4)

Role of Animal Health Experts, FDA Regulations Discussed

By PAUL L. DITTEMORE
Feedstuffs Staff

WASHINGTON — The cold accounting of facts and business judgment coming into modern agricultural production indicate that animal health experts should play an increasing role in planning animal production programs.

Dr. Daniel G. Aldrich, Jr., dean of the College of Agriculture, University of California, emphasized that conclusion in an address presented at the 21st annual meeting of the Animal Health Institute at the Mayflower Hotel in Washington April 24-26.

Among other talks at the AHI meeting was one by a Food and Drug Administration official who offered explanatory and clarifying information on FDA regulations on feed additives, including drugs in concentrates used in making a complete feed. (See summary below.)

Dr. Aldrich pointed out that adequate human nutrition "means animal proteins—milk and its products, meat and eggs." He said that with the steadily increasing size of agricultural production units, there come disease problems. "With size, concentration and crowding there

(Turn to ANIMAL HEALTH, page 83)

Well Over 2,000 Expected at AFMA Meeting, Feed Show

CHICAGO—Plans are set for the big American Feed Manufacturers Assn. convention and National Feed Industry Show, and the combined event is expected to draw a crowd of well over 2,000 feed men.

The 53rd annual convention and the 7th feed show will be held May 7-10 at the Conrad Hilton Hotel in Chicago.

Both the convention program and the show, with its more than 100 exhibits, promise particularly timely information for the fast moving, fast changing feed industry.

The convention activities are set to begin Monday, May 8, while the show will open with an "Advance Look" day on Sunday, May 7. Feed men are encouraged to attend the entire combined event, running through Wednesday, but for those

(Turn to AFMA, page 8)

Freeman Says Response To Plan Is 'Favorable'

WASHINGTON—Initial reports of farmer response to the administration's emergency feed grain program have been "highly favorable," Orville L. Freeman, secretary of agriculture, said this week.

He said the first survey taken by Commodity Stabilization Service area directors in the 32 states where the program now is in operation indicates heavy farm interest in the program.

"In those states—especially in the Midwest—where farmers can now join the program, the number of sign-ups has been very encouraging," he

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Poultry Cooperative Reorganizes; Has New Name, Division

NEW YORK — The Northeastern Poultry Cooperative Assn., Trenton, has a new name, a new division for marketing poultry, a reorganized board of directors and authorization for expanded capitalization.

The new name—North American Poultry Cooperative Assn.—came into being April 20 at a special meeting of Northeastern's board of directors and members in New York City. Officials said the name change "is appropriate to the expanded services that the eight-year old 'cooperative of cooperatives' initiates under the

(Turn to POULTRY, page 7)

Hatching Eggs Go to Breakers

By ROBERT H. BROWN
Special Correspondent

ATLANTA—Hatcherymen with extra hatching eggs originally intended for broiler production are finding a ready market for these eggs in breaking operations, it was learned here this week at the egg commodity committee meeting of the Southeastern Poultry & Egg Assn.

Harold Ford, executive secretary of the association, said the organization had polled breakers who expressed interest in obtaining more of these

(Turn to HATCHING EGGS, page 7)

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Broiler Prices Keep Sliding in Southeast; Growers Taking Losses

"Even the good growers who are completely integrated are operating at a loss," said an observer of the southeastern broiler industry this week. "The picture is not the least bit good."

Despite this situation, he said, broiler feed volume continues good in the Southeast—"but this is due

(Turn to PRICES, page 83)

K-State Plans Special High School Program For May 18 Dedication

MANHATTAN, KANSAS — Dedication of the new milling technology building at Kansas State University May 18 will include a special program to acquaint high school students with the K-State milling technology program, Dr. J. A. Shellenberger, head of the department of flour and feed milling industries, announced.

The special high school program

(Turn to K-STATE, page 79)

Purdue Reports on Vitamin A, Other Cattle Feeding Research

By DR. T. W. PERRY
Purdue University

LAFAYETTE, IND. — Findings in studies of vitamin A supplementation levels for fattening cattle rations were among the research results reported at the annual Indiana Cattle Feeders Day this week at Purdue University.

The event included reports on several recent Purdue experiments on the feeding of fattening cattle.

In addition to those on vitamin A, the research reports covered these topics:

—Pelleted rations containing various amounts of hay.

—Various ratios of corn and corn silage in fattening rations.

—The feeding of hormone-like sub-

(Turn to PURDUE, page 83)

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The regional circulation of this issue is concentrated in the southeastern states

Top of the Hopper

THE BIG PUSH is on in Washington to get the Freeman-Cochrane farm bill approved. There is no doubt that the administration will use every effort, political and otherwise, to get Congress to accept the legislation. "They're dead serious about this," commented an observer who knows intimately the economic thinking of Secretary Freeman's advisors. "You may not agree with them, and a lot of other people might not agree with them, but they mean business," he said.

Those who oppose the approach of the U.S. Department of Agriculture chiefs, a "do-it-yourself" kit for producers of individual commodities which endorses strict production controls, should take note of Mr. Freeman's approach to selling the program. In testimony before the House Agriculture Committee he had this to say:

"If American farmers are given some assurance of relatively favorable prices and incomes in the 1960's, and if we provide a sound program for adjusting our production to that which can be used, we will have a highly productive and flexible agricultural plant—one capable of responding to any foreseeable food production emergency. This is the kind of agriculture we want.

"But in the absence of such a program, results could be disastrous. What are the potential consequences?

"Farmers could, in the absence of such a program, use their productive capacity indiscriminately. In that event, if support programs were continued, the burden on the federal budget would become intolerable, and the stockpiles of surplus completely unmanageable. Or—and more likely—the public would refuse to continue such supports, and prices and incomes would be driven down so low that results could be catastrophic."

IT TAKES A SPECIAL KIND of talent, possessed by Mr. Freeman, to describe as "flexible" a program based primarily on strict production controls—a move which is described by the American Farm Bureau Federation as a "bid to concentrate unprecedented power over the destiny of American agriculture," in the hands of the secretary and the executive branch of government. Flexible perhaps from the standpoint of those pulling the strings, but certainly not at the other end of the line. Operation of such a gigantic puppet show apparently will cost nothing, in Mr. Freeman's opinion.

Congressional reaction has not been measured to any degree as yet, but caution and concern are in order. Many people opposed to the feed grain bill predicted that it could never pass. It did.

THERE, OF COURSE, is real concern within the industry as to how much power USDA will be given to control agricultural production. For example, the American Poultry & Hatchery Federation observes: "Proponents of government regulation must be dancing with glee at the current display of poultry expansion. It will make their goal much easier to attain. Many who heretofore would not condone controls may now reach out for them as a last ditch solution."

JOB OPPORTUNITIES for graduates of colleges of agriculture remain good in 1961, but the payoff is on the Ph.D. degree. A rapidly growing difference in starting pay between graduates at the B.S. and Ph.D. levels is highlighted in a survey of 11 land grant colleges by Iowa State University. The schools reported that 1960 graduates with bachelor's degrees began

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How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Feed business during the week was generally good. Reports from the region vary from indicating business as being off to being brisk. Some feed men said they would set records for the month.

Soybean meal and animal protein prices advanced rather sharply during the week as the ingredient market continued its gyrations. It has caused much purchasing to be on a "hand-to-mouth" basis throughout the industry.

Chick and pig starter feeds showed up well and turkey feed was picking up as the birds begin to eat more. Broiler feed business was good although the broiler industry is going through financial straits. High feed prices and record low prices for broilers at the farm were reportedly pushing some southeastern operations into bankruptcy. But, placements have been high and birds placed must be fed.

The U.S. Department of Agriculture reports that the wholesale feedstuff price index advanced 2.2 points from a week ago to 89.9 and was 12.6 points above a year earlier. The week's feed-grain index was up three points from last week at 63.6, but trailed a year ago by 3.3. The hog-corn ratio, based on Chicago prices, was 15.9 this week compared to 16.3 last week and 13.4 the same week last year. (Major feed market review and ingredient quotations on pages 80-82.)

Northwest

Feed manufacturers in the Northwest report business is varying from off to good, compared with last week. The majority says the month of April has been a much better month than the corresponding month a year earlier. One firm reported its business up 30% and two firms said they expected the month to end up 15% ahead of April, 1960.

One manufacturer said business was off 2% from last year.

All manufacturers report turkey business to be increasing as the birds eat more feed. Broiler and chick starters are moving well and some manufacturers report hog and steer feeds also moving.

Dairy feed sales taper off in this area as pastures open up in late spring.

Prices of high protein feeds will increase $1-3, most feed manufacturers say. Further increases in soybean meal made the animal proteins bullish. Meat and bone meal prices ranged $13-18 higher and tankage was up $12-17.

One feed man said he feared that the price increases may hurt the feed business this summer in that farmers would feed fewer animals or rely more on farm grains.

Southwest

Formula feed business in the Southwest continues at close to last week's pace although some trade sources indicated that volume was somewhat less. In most cases mills will operate on a five-day schedule but some reported a slow five-day operation with backlogs at a minimum.

Mixers' volume is comprised mainly of pig feeds and turkey feeds which are providing a greater share of volume each week. Some increase in chick feed was noted with this volume running ahead of a similar period a year ago. Starter feeds in all lines were moving well.

The low broiler prices have been a matter of concern to mixers; however, volume of broiler feeds continues at a high level. Broiler prices have not shown any appreciable improvement during the past week.

The movement of hog feed is below mixers' expectations. The complete formula is being replaced by feeding low priced grain and proteins.

Northeast

Mixers' sales held steady this week, with no big pickup or letdown in sight.

The changeover from concentrates to more complete dairy feeds continued with manufacturers offering a low-protein (about 14%) feed to supplement the diet of grass fed cows.

The continued strength in soybeans resulting from a reported shortage of supplies will accelerate the move by mixers to substitute other ingredients for soybean oil meal. Substitutes likely to be used by mixers in this area are meatscraps and fish meal, plus a buildup in the use of linseed oil meal and a revival in the use of the long dormant cottonseed oil meal.

Egg mashes moved in volume during the week. Chick starting, growing and turkey feeds are showing up increasingly in the over-all tonnage.

But as one spokesman said, broiler feeds are in a "sad situation." He added that he was glad there "isn't much integrated broiler feeding in this area."

Broiler prices ranged from a rare top of 15¢ lb. to a low of 13½¢ and an average level of 14¢. One grower in western New York, marketing 20,000 birds at 14¢ lb., said at this level he would only be able to recover his "pocket book" costs and would be out his labor.

Egg prices were steady to lower.

Running time of formula feed manufacturers held steady at 36 hours last week.

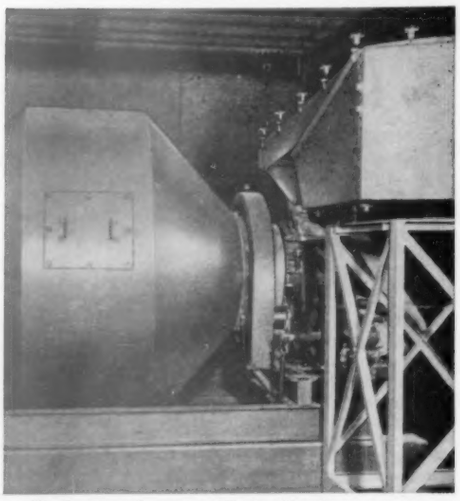
Southeast

Formula feed business in the Southeast continues to be reported as being slow to very good. Good pastures and a good surplus of milk are causing dairymen in many areas to dry up their cows which is slowing down dairy feed business. Broiler feed business continues good with some mills operating 24 hours a day; this is due to the fact of the greater number of broilers on feed.

The picture in the broiler industry is not the least bit good. With higher prices of feed ingredients and broilers selling at 13½¢ lb. f.o.b. the farm, even the good growers who are completely integrated are operating at a loss. It is rumored that the losses some are having to take are causing them to take bankruptcy and many are predicting that broilers may get as low as 12¢ lb. Some commercial hatcheries are placing their eggs on the open market at reduced prices.

Good demand for corn has caused prices to advance as much as 4¢ bu. making the delivered price range from $1.30 to $1.36 depending upon location. Many cotton seed oil mills have completed their crushing operations and this is causing cottonseed meal and hulls to be in

(Turn to **MARKETS**, page 85)



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But, since all animals do not need or use the same factors, modifications of the basic formula should be made to *control* the amounts of vitamins and trace minerals that will be added to the ration. And, that's a job for *Peter Hand's new C-F Premixes.*

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Investigator Summarizes Answers To Label Revision Questionnaires

AMHERST, MASS. — A summary of replies from feed control officials and representatives of the feed industry in response to a questionnaire mailed by the Association of American Feed Control Officials to sample reaction to label revision proposals was issued this week.

John W. Kuzmeski, professor in charge of feed, fertilizer and dairy law, University of Massachusetts, released the summary as the investigator appointed by the association to conduct the survey.

Comments by Mr. Kuzmeski, based on answers to eight questions, indicate:

- Control officials favor more quantitative guarantees than do industry members.
- Most respondents think the present method of labeling is not satisfactory.
- Further consideration of the "open formula" is not warranted.
- Most respondents think further study of revision proposals would result in improved label information.

The questionnaire was sent to about 200 feed manufacturers, control officials, trade group spokesmen and federal officials (Feedstuffs, March 18, page 6).

Some industry spokesmen say simpler and more flexible feed tag requirements are needed. AAFCO said its study was initiated to determine whether it is possible and desirable to devise a tag bearing information that will reflect to a greater degree the nutritional value of a feed than does the information on present tags (Feedstuffs, March 4, page 1).

A summary of answers to the survey questions and comments by Mr. Kuzmeski follows:

1. WOULD IT BE PRACTICAL to list in the AAFCO Official Publication the ingredients that would

(Turn to SUMMARY, page 79)

Ford Patterson Joins ADM Alfalfa Division

KANSAS CITY—The appointment of Ford K. Patterson to the sales staff of Archer-Daniels-Midland Co. alfalfa division, Kansas City, effective May 1, has been announced by Loyd M. Faris, director of alfalfa sales.

Ford K. Patterson

Mr. Patterson, formerly sales manager of Midwest Alfalfa Blenders, Inc., comes to Archer-Daniels - Midland Co. with 30 years of experience in the alfalfa industry.

DRUG PROBLEMS

(Continued from page 1)

gers of improper drug use — from toxic effects on livestock, the danger of pure food and drug seizure and, not least of all, the personal and family health impact of having highly potent medicaments about the farm.

- The importance of accurate handling of materials properties of which are such that fractions of an ounce per ton of feed can mean the difference between illness and health, profit and loss.

He raised the question as to how many farmers are equipped to handle, store, weigh and mix with the accuracy that these materials demand. And, he indicated in an aside that he sometimes wonders how many commercial mills are thus adequately equipped.

"I'm out of my depth in telling you folks how to sell feed," he continued. "But I did want to tell you how I feel about feed quality and its relationship to customer confidence and maintaining and increasing sales — and how important it is not only to you to keep your business, but also how important it is to the feeder that you keep your business."

Referring to drugs in feed as a "potent double-edged sword," Mr. Baker declared that they deserve respect "not only for what they can do for you, but what they can do to you."

Likened to Iceberg

"The natural sales pitch you get from the drug supplier emphasizes the unquestioned value of the medication," he said. "He supplies you with other essential data, such as the necessary feed tag withdrawal statement, maximum amounts to use, and so on. But, like with icebergs, I fear that the most difficult problems you face with these materials remain below the surface, and are largely unknown, even to the supplier in many instances."

Many feed additives have narrow limits between no effect, beneficial effect, and toxic effect, he said, and the necessity for mixing small amounts of additives with accuracy requires close attention to mixing practices.

"There is, I fear, a basic disregard for your own health, and that of your employees in storage, handling and introduction of drugs. I anticipate that employee insurance premium rates will soon begin to reflect this attitude, and other costs may accrue upon those of you who are unaware of, or disregard, the seriousness of this problem."

Mr. Baker said that literature is becoming more prominent with reports of industrial hazards from exposure to medications.

None of these dangers present insurmountable problems to the commercial miller, he pointed out. "I advise you to address yourselves to drug handling competence, and make yourselves so conversant with their properties that feeders cannot hope to equal what you can do for them. I urge you to develop a history of drug handling to the extent that no one in the feed trade can be criticized."

Drug suppliers have a responsibility to tell feed men how to avoid trouble, and feed men have an obligation to pay attention. "Already departments of public health and divisions of employee safety with labor departments, are expressing interest in environmental conditions in feed plants using feed additives. I am trying to bring to you the importance of taking appropriate defensive steps to avoid further interest by these agencies, as well as higher employee insurance costs.

"If you don't try to solve it yourself you are inviting additional expense and trouble that you can hardly afford," he said.

Warns Against Skimping

A portion of Mr. Baker's talk also was devoted to observations he has made previously to feed groups that certain price-cutting and quality-skimping practices contribute to failure of farming enterprises or push farmers into making their own feed.

"The sad part of all this is that with the advent of bulk feed practices and medications you feed men should be serving your lost customer with better and less expensive feed, delivered on the farm, than you have ever been able to do before," he said.

He urged that feed men "get out and convince that customer that you are a specialist in what has become a highly scientific business—feed formulation—and that your scientifically designed formulas take into account the best ingredient prices and the best possible combinations, including drugs. Tell him that he is legally protected under the feed laws when he buys a branded feed. Inform him that a commercial feed must have only legal drugs at legal levels.

"Let him know, even at the expense of flattery, that he, too, has a scientific job to do—the job of management—and he can't expect to be a nutritionist, milling equipment specialist and ingredient buyer and continue to devote as much attention to flock or herd management as it deserves."

Mr. Baker also suggested that feed men get better acquainted with extension agents in order to help them better understand some of the complexities of feed manufacturing, the protection of the commercial feed laws, ingredient buying problems, handling of additives and so forth. "You should draw your extension service into cooperating with you rather than competing with you," he said.

Advertising Suggestions

Suggestions on developing sales through advertising were offered the feed men by John H. Hoefer, president of Hoefer, Dietrich & Brown, San Francisco advertising agency.

The feed industry may be thought of as a prosaic business by many, Mr. Hoefer said, but actually the kinds of services it performs offer many opportunities for creative advertising.

Consumers respond to advertising when the benefits to them are stressed, Mr. Hoefer said. "Price alone won't do it, but such things as quality, location, convenience and special services can produce results if advertised effectively."

He suggested that advertising should tell less of "how your product came to be and more of what it will do for me."

• • •

California Group Decides Against Name Change

SAN FRANCISCO — Members of the California Hay, Grain & Feed Dealers Assn. decided not to change the name of their organization after all.

Prior to the annual meeting at the Jack Tar Hotel April 20-22, members in a mail survey indicated "by an overwhelming number" that they would like to have the association called the California Grain & Feed Assn., Arthur H. DeRaad, president, said.

Mr. DeRaad, of DeRaad Warehouse, Lemoore, Cal., said that subsequently objections were received from people in the hay business, so the board of directors decided it would be best to keep "hay" in the name, merely dropping the word "dealers."

Members at the convention were asked to express their preference, and in a voice vote it was decided to make no change at all.

But while "the name's the same," the organization and its convention definitely had a new look. Attendance, which totaled 737 (including 235 wives), was the largest registration in 37 years.

The association, Mr. DeRaad reported, now has 504 members, reversing a declining membership trend for the first time in five years.

New President

T. D. Griffin, Bell Grain & Milling, Pomona, was elected president of the group to succeed Mr. DeRaad. Dolph Hill, Jr., Golden Eagle Milling Co., Petaluma, was named vice president.

New directors elected are Blair Erigero, the Pillsbury Co.; W. A. Gould, Consolidated Milling Co.; R. C. Anspach, Wilbur-Ellis Co., and

(Turn to CALIFORNIA, page 79)

Need for High Quality Dairy Feeds Cited

SAN FRANCISCO — More attention to higher quality dairy feeds was urged by Dr. James D. Schuh, extension dairy specialist of the University of Nevada, in a talk at the California Hay, Grain & Feed Dealers Assn. convention April 20.

"Only by using high quality feed will we be able to realize the full potential of animals we are feeding," Dr. Schuh said.

Improvements have been made, he said, but more attention should be paid to energy requirements of dairy animals. Feeds that are highest in fiber are lowest in nutrients, with energy dropping 2½ to 3% for every increase of 1% in fiber. Increasing energy of rations with addition of fat has been studied in a number of experiments, and some significant increases in butterfat content of milk have been achieved in this way. Also, some experiments have shown a synergistic action between barley and added fat, he reported.

Nevada studies in which fat and sodium propionate were fed did not increase utilization of energy from fat, he said.

Dr. Schuh noted that pelleting and more frequent feeding, as well as providing higher energy feed, also are aimed at increasing production of dairy cows.

"One can't substitute high fiber materials for grain in making a good dairy ration," he said. "Also, it isn't necessary to include eight to ten different grain products and three to four protein sources in a dairy feed."

It is necessary to know the energy content of grains in local areas, he pointed out, as it is not possible to always "go by the book." For example, much barley harvested in California has declined in energy value, and the energy values of Kansas milo also are dropping.

He urged feed men to encourage feeders to test hay so that its value is known and also preach the value of high energy feeding, particularly in summer. "Contrary to what one might expect, high energy feed is a cooling feed," he said..

Corn By-Product Recovery Estimated

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Officials of the U.S. Department of Agriculture, now struggling with contract terms for the approved sale of Commodity Credit Corp.-owned corn for industrial alcohol manufacture, report that the by-product feed recovery will amount to between 5,000 and 6,000 tons per month of distillers solubles and dried grains.

It is understood that the most recent draft of the proposed contract which carries a renegotiation clause will provide for recapture by the government of any profits over 2% after taxes from the manufacture of industrial alcohol from CCC corn.

It has been learned that USDA is trying to make the contract tight in every respect since it is believed that only one major distiller can qualify for purchase of corn from the government on the basis of previous use of off-shore molasses for industrial alcohol production.

(Turn to CORN, page 8)

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No need to elaborate on the advantages of uniformity in your dehydrated alfalfa. But we do want to point out that uniformity of grade, color, and nutritive value of Small's Dehydrated Alfalfa is a "sure thing." This is so because of Small's system of precision blending and "double-check" laboratory analysis. That's why you are guaranteed in writing that Small's Dehydrated Alfalfa delivered to your plant will meet your specifications—car after car, year in and year out.

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California Effort To Meet Water Needs Discussed

SAN FRANCISCO — California's huge and somewhat controversial water control and conservation project was described and defended by Harvey O. Banks, retiring director of the California State Department of Water Resources at the California Hay, Grain & Feed Dealers Assn. convention April 20.

"An adequate supply of water is imperative for agriculture, industry and urban development, and industries close to agriculture are vitally concerned with this need," Mr. Banks said.

Work already is underway on portions of the $1.75 billion project. However, some opposition to it has been voiced by various elements in the state, particularly in northern areas.

Mr. Banks observed that "people don't worry about water except when there's a flood or a drouth." These problems occur periodically, but since it is impossible to predict just when they will occur, construction of control facilities must be completed in advance if problems are to be avoided, he said.

Worst Since 1951

California is now in the midst of its severest drouth since 1951. The Kern River is running at only 20% of its normal flow, and southern California will be lucky to get enough water to wet stream beds once this year, Mr. Banks said.

In the Sierra area, a beef-producing section, only the highest priority users are getting water, and this supply may be exhausted by July, he noted. And in southern California several critical areas which rely on ground water supplies now are pumping from 600 ft. or more. A number of other agricultural areas face problems of flooding or of shortages, he said.

An expected sharp increase in population in California intensifies the need for water control measures, Mr. Banks said. The present 16 million population is expected to double by 1980 and climb to 56 million by 2020, with most of the increase in the south.

As urban growth increases, agriculture will be pushed out of southern California, but there will be considerable farming there for some time to come, he said. "If Colorado River rights are upheld, the area will have sufficient water until 1970, but right now California is facing the prospect of substantial loss of this water supply as other developments claim a larger share of it," he said.

The over-all project includes plans for reservoirs, irrigation systems, three major aquaduct systems, drainage facilities and recreational areas.

Egg Breaking Firm Opens in Arkansas

NORTH LITTLE ROCK, ARK.—Miss Lark Egg Products Corp., a new egg breaking firm, has started operation here, providing a market for surplus eggs produced in the state.

G. W. Lindsey, one of the officers of the corporation, said the new plant started operation with 500 to 1,000 cases of eggs weekly.

Others associated with Mr. Lindsey are: Dave Phelps, president, Adkins-Phelps, Little Rock, and Ted Cameron, president, Cameron Feed Mills, Little Rock.

The new facility is located in the Adkins-Phelps Egg Plant, which was opened recently to carton shell eggs.

Mr. Lindsey said the breaking plant will be operated throughout the year, packing whole eggs and separating eggs and blending eggs to specific requirements.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
February 18	1,185	395	949	765	122	816	2,013	2,220
February 25	1,191	390	956	743	102	767	1,939	2,427
March 4	1,184	414	710	819	99	843	2,115	2,076
March 11	1,170	404	908	777	130	722	2,092	2,046
March 18	1,229	468	928	854	80	749	2,138	2,186
March 25	1,242	434	861	893	101	842	2,172	2,427
April 1	1,214	494	815	891	125	823	2,276	2,582
April 8	1,263	548	868	967	104	850	2,124	2,632
April 15	1,234	512	915	972	120	787	2,250	2,583
April 22	1,209	520	989	884	167	807	2,121	2,638

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
February 18	1,195	462	4,099	422	7,521	238	4,188	2,979
February 25	1,026	529	3,984	412	7,655	223	4,404	3,085
March 4	973	465	3,895	480	7,668	227	4,649	2,860
March 11	1,238	510	4,008	404	7,681	259	4,737	2,952
March 18	1,327	600	4,112	449	7,739	279	4,954	2,958
March 25	1,465	649	4,304	433	8,441	257	4,951	3,288
April 1	1,340	649	4,442	476	8,747	291	4,921	3,294
April 8	1,477	753	4,398	553	8,981	262	4,875	3,424
April 15	1,489	621	4,477	487	8,902	344	4,928	3,364
April 22	1,512	518	4,496	469	8,885	268	5,091	3,321

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1961	Total 22 areas 1960
February 18	4,711	501	2,760	373	253	1,377	39,544	34,392
February 25	4,827	556	2,707	352	264	1,426	39,965	34,604
March 4	4,664	508	2,816	413	305	1,486	39,669	34,954
March 11	4,621	608	2,860	350	355	1,473	40,305	35,168
March 18	4,926	620	2,950	358	260	1,533	41,697	35,468
March 25	5,269	600	3,087	401	352	1,475	43,944	35,637
April 1	5,499	658	3,274	367	250	1,443	44,871	34,870
April 8	5,448	598	3,280	363	248	1,422	45,440	34,708
April 15	5,604	623	3,094	398	293	1,516	45,513	34,980
April 22	5,517	584	3,207	340	364	1,502	45,409	36,235

SLIGHT RECOVERY NOTED IN HOG, CATTLE PRICES

CHICAGO — Prices of all major classes of slaughter livestock dropped to their lowest points of the year early this week. At week's end there had been some recovery in hogs and beef cattle, but trading in lambs remained quiet and prices were steady at the 15-year low levels of $13-16 cwt.

The average slaughter steer price here was about $24 April 26, the lowest since last October. Shipments were moderate April 27, and the market showed slight strength. A top of $27.75 was reported.

Lightweight hog receipts were light and were attracting a top of about $18 at week's end, up about 60¢ from the April 24 top of about $17.40, the lowest since October.

First Dog Food Off Line in G.L.F. Plant

WAVERLY, N.Y. — First bags of the G.L.F. Big Red Dog Food recently came off the line at a plant here leased to G.L.F. by Corn Products Co.

On hand for the occasion were Charles Bayly, director of operations for marketing services, G.L.F., and C. B. Tallman, small animal food department manager, G.L.F.

The facility was leased by G.L.F. to produce foods formerly made at a plant in Canandaigua, which was destroyed by fire Jan. 1. Corn Products made dog food and stock feeds in the mill. G.L.F. says that it is using only the section of the plant equipped for small animal food manufacture.

Honeggers' Dividend

FAIRBURY, ILL.—The board of directors of Honeggers' & Co., Inc., Fairbury, has declared a 1½% quarterly stock dividend payable May 20 to stockholders of record May 10, continuing an uninterrupted quarterly stock dividend policy based upon 6% per annum since 1954.

Sales of $11,218,458 for the nine-month period were up over $700,000, while expenses were down $48,513. Profits were $207,455.68, compared with $65,703.44 the same period last year.

Sam R. Honegger, chairman of the board, states that the company's full year ending June 30 should be the highest in the company's history from a profit standpoint.

GFDNA Membership Drive Adds 412 New Members; Expect More

WASHINGTON — The "Membership Expansion Day" of the Grain & Feed Dealers National Assn. has resulted in the greatest influx of applicants ever experienced by the association in such a short period of time, according to information from the Washington, D.C., headquarters.

As of April 26, 412 new members had definitely been added to the membership roster, and further additions were coming into the headquarters office every day. Sam Rice, Jr., membership chairman, reported that many states are still working, and he expressed confidence that the after effects of "ME" Day will bring in even more new members in the weeks and months ahead.

Mr. Rice said that April 18 was originally designated as "ME" Day, but that the enthusiasm of the voluntary workers made it necessary to continue the project long enough to allow all prospective members a fair chance to join the national association."

The object of the membership expansion project was to "broaden the base" of the Grain & Feed Dealers National Assn. to make possible additional membership services.

Charles Force, president, predicted that additional services might become a possibility sooner than expected because of the hard work of GFDNA members in making "ME" Day a success.

Ask Clearance on Vermiculite in Feed

WASHINGTON — The Food and Drug Administration announces that clearance has been asked on use of exfoliated vermiculite mineral in poultry feed.

FDA said that the Zonolite Co., Chicago, has proposed issuance of a food additive regulation to provide for use of the vermiculite in poultry feed as a nutrient carrier, physical conditioner and/or pelleting aid.

Branch Manager Dies

DOTHAN, ALA.—Funeral services were held in Dothan for Dan N. Forrester, 53, manager of the branch of Cosby-Hodges Milling Co. of Birmingham. He died in a local hospital following a heart attack suffered during a golf game.

A native of Loganville, Ga., he had been with Cosby-Hodges for 18 years. He moved to Dothan from Birmingham in 1946.

Broiler Egg Set Slows Slightly

SALISBURY, MD. — There has been some slowing down in the broiler egg set, but it is still ahead of a year ago. Chick placements in major broiler states last week were slightly below the previous week but a sharp 25% above the corresponding week in 1960.

Meanwhile, an abundance of broilers on the market has driven prices down. In Delmarva last week, the average was 14.59¢, compared with 15.31¢ the previous week. A year earlier the price was 17.19¢.

During recent years the nation has been able to consume about 10% more broilers each year. This year, so far, broiler production has been running about 25% ahead of last year.

Hatcherymen in the 22 important broiler producing states set 59,967,000 eggs during the week ending April 22. This was 2% below the previous week, but 12% above the corresponding week a year ago. Settings were down from the previous week in 15 of the 22 states. States for which sizeable decreases were reported include Georgia, Arkansas, North Carolina and Alabama.

Chick placements in the 22 states totaled 45,409,000 broiler chicks. This was slightly below the previous week but 25% above the corresponding week a year ago. Decreases were reported for 12 states compared with the previous week. States showing appreciable decreases include Delaware, West Virginia, Indiana and Arkansas.

Poultry Firm Now Mixing Complete Feed

DANVILLE, ARK. — The Joe Ray Poultry Co. began mixing a complete feed at its mill here in April. The capacity is 10 tons an hour. By Aug. 5 Mr. Ray expects to triple production. At that time the new Ray push-button feed mill will be finished.

This completely modern mill is being erected at the rear of the present operation.

Mr. Ray says that when his new mill is completed, the wall between the two buildings will be torn down. The expansion will enable the Ray mill to mix at least 20 tons of feed every hour, he says. Storage space will also be available for 18 cars of feed in a new steel storage building. Work on this storage structure will begin May 5, Mr. Ray said.

ADM Confirms Grain Terminal Negotiations

MINNEAPOLIS — Archer-Daniels-Midland Co. has confirmed that negotiations are underway with the Garnac Grain Co., New York, for joint construction of a grain terminal elevator on the lower Mississippi River.

The firm said that no further announcement will be made until completion of the negotiations.

Plan Spring Party

COLUMBUS, OHIO — The Columbus Feed Club's annual spring party will be held May 4 at the Officers Club, U.S. Government Depot here.

A friendship hour will open the event at 6 p.m., full-course dinner will be served at 7:30, and dancing will be from 9 until midnight. Over $200 in door prizes will be given away.

The Officers Club has requested that every member's and guest's name be on the list submitted to it by May 1. There will be no admittance without reservations, or cancellations after May 1.

HATCHING EGGS

(Continued from page 1)

eggs, and he urged broiler hatcheries to consider these buyers. The breakers are paying 32½¢ doz. for them at the source and this price compares favorably, considering all factors, with current prices of 5-7¢ each for hatching purposes.

The egg commodity committee was told there is a need for diverting broiler eggs to other markets in order to avoid an influx into the commercial egg channels caused by low prices of both eggs and broilers.

Breakers are anxious to obtain all of these eggs, if possible, Mr. Ford said, because they are heavies and are of a desirable color content.

Broiler hatcherymen who might have extra hatching eggs were urged to use orderly marketing procedures, with the possibility of breaking plants as a source of markets at a more reasonable price than the "distress" market.

More Optimistic

The egg commodity committee, which meets regularly to make recommendations and chart courses for future operations, was considerably more optimistic about this market than was indicated at two other committee meetings in Atlanta in recent weeks. Those other meetings were concerned with broilers and turkeys.

Commercial egg production this year in the South is 20% over 1960 but still under 1959, one of the heavy production years.

Even though there has been an increase, the members were definitely optimistic on potential profits this year.

Reports given out at the meeting indicated it will be January or February before production will reach anywhere near the 1959 figures. However, members expressed complete agreement that the Southeast needs more orderly marketing by producers.

Marketing Proposal

The subject of a marketing organization for Southern producers was renewed and discussed, although no definite action was taken. The proposed selling organization would be composed of leading producers in the Southeast, and a central marketing office would be established, according to the original plans. Members of the committee suggested that more effort be made toward the organization of the market. Recommended was a meeting of a number of egg shippers to see if a focal point for marketing can be arranged.

One spokesman noted that SEPEA was not going into the egg handling business, but was to serve as a service channel to help get such a company started if the industry felt it was wanted.

The committee decisively, said it wanted no part of government control of the egg business and stipulated that "government controls do not serve the small farm operator but rather accelerate big business, driving the little producer out of the picture."

Also suggested was a close study of the operations of the exchange traders in both cash and futures markets.

One Price

Price quotations based on one price only were recommended. The quotation should be the "top" price, the committee said. It was noted this would tend to do away with area designation for price reporting.

The meeting was presided over by Maurice Pickler, New London, N.C. Others attending were: Charles Cook, Charlotte, N.C.; Blanton Smith, Nashville; John Wallace, St. Petersburg; Ralph Kelley, Garner, N.C.; Bob Weidlick, Roanoke, W.Va.; R. C. Scarborough, Lamar, S.C.; Bob Butterworth, Mayfield, Ky.; Bev Yeiser, Winchester, Ky.; Dennis Stringer, Atlanta; Norman Sanders, Columbia, S.C.; Paul Davis, Douglasville, Ga.; George Seatin, Atlanta, Ga.; Curtis Collier, Atlanta; E. H. McLaughlin, Birmingham; Byron Keener, Montgomery, Ala.; Hal McGeorgie, Memphis; Harvey Green, Spartanburg, S.C., and Mays Montgomery, Athens, Ala.

POULTRY

(Continued from page 1)

new banner." They also announced that North American will continue to serve its members with its wholesale egg division and its institutional sales division as Northeastern has in the past.

Charter Amended

By amending its charter and by-laws, Northeastern Poultry Cooperative Assn. becomes North American Poultry Cooperative Assn. with a nine-man board of directors replacing the 49-man board and the executive committee, and with authorized capital stock increased from $300,000 to $600,000 "to take care of capital needs for the new poultry division."

The new board of nine directors is made up of four from associations whose major interest is marketing eggs, four from poultry marketing associations and one director at large.

Directors elected from the egg marketing associations are C. H. Stains, Flemington Agri-Market; Claude Smith, Mississippi Federated Cooperatives; Ralph B. Treat, Federated Egg and Poultry Sales, and Howard Whelan, Eastern States Farmers Exchange. The four directors chosen from associations with major interest in marketing poultry are: Ben Firestone, Southern States Cooperative; W. J. Wood, Farmers Cooperative Exchange (N.C.); H. C. Kennett, Central Carolina Farmers Exchange, and William Pulliam, Cotton Producers Assn. (Ga.). Director at large is E. A. Kirschman, Lehigh Valley Egg Producers (Pa.).

At its organization meeting, the directors elected C. H. Stains, president; H. C. Kennett, vice president; R. R. Flumerfelt (G.L.F.), treasurer; Alfred Van Wagenen (NEPPCO), secretary, and B. B. Gehgan as assistant secretary and assistant treasurer.

"Operating Group Needed"

North American officials said the reorganization and expansion came about as the result of a series of meetings initiated by the American Federation of Poultry Producer Associations. "The federation group felt strongly that an operating organization was needed for their members in the field of poultry marketing, but that the possibility of utilizing an existing organization should be thoroughly explored before any move toward creating a new one was considered," they said. "Finding sympathetic reaction from Northeastern's executive committee, a special committee of three members from each organization was created and worked out the details for the change to North American Poultry Cooperative Assn. and the creation of the poultry division."

The new division plans to engage a manager and set up a sales office for the products of its members. B. B. Gehgan, general manager, is at present in Europe exploring the possibilities of expanded sales overseas for both eggs and poultry.

"The change in name will not necessitate any change in existing shares of stock," officials said. "Holders will find their rights fully protected and covered, though, of course, dividends will be paid under the new name."

FIRST BATCH OF CHICKS

RUSSELLVILLE, ARK.—The new Sky Fresh Hatchery has taken off its first batch of chicks, according to Robert Moellers, president and general manager. Operated by the Kinslow brothers, the new hatchery has 7,150 sq. ft. of floor space and is air conditioned. Mr. Moellers said he plans to have hatches coming off four days weekly until fall, when there will be new hatches every day.

H. K. Webster Names Purchasing Assistant

LAWRENCE, MASS.—Raymond C. Hall has been appointed as an additional executive in the purchasing department of H. K. Webster Co., manufacturer of Blue Seal Feeds. Mr. Hall, who received his B.S. degree from the University of New Hampshire in 1950, spent five years in county agent work in Hillsboro and Coos Counties of New Hampshire, followed by six years with Wirthmore Feeds as a dairy salesman, supervisor and later in purchasing.

Raymond C. Hall

He will assist John P. Brooks, who is in charge of purchasing at the Webster company's office in the Boston Grain and Flour Exchange Building.

Dean K. Webster, president of H. K. Webster Co., states that "despite intense competition of the present period, very definite progress is being made saleswise and the company is fully confident of its future development in the New England states and the eastern portion of New York state."

Corn Products Co. Forms Division For Feed Products

NEW YORK—A new feed products division has been formed by Corn Products Co., New York, it was announced here this week. This division will have the responsibility of merchandising the company's entire line of ingredient feed products and will report to Robert F. McLeod, general manager, the announcement said.

"Better products and superior service for our customers in the mixed feeds industry" were the reasons given by Corn Products for forming the division.

"This new division will move aggressively to upgrade the company's products," Mr. McLeod said, "building in those properties most desired by our customers — economy, improved nutrition and adaptation to modern feed technology.

New Product

"The first such new product from the division is 'Prairie Gold,' a 60% corn gluten meal for poultry feeds. After tests over a two-year period, which included feeding to over 100 million broilers, the product was placed in limited distribution. Now, in order to satisfy strong customer demands, production facilities are being readied, and as soon as they are completed the product will be generally available.

" 'Prairie Gold' . . . provides a high concentration of energy, xanthophyll, vitamin A and the sulfur amino acids methionine and cystine."

Other products presently marketed by the division include Buffalo gluten feed, corn germ meal, milo gluten feed and meal, Mazoferm and Hydrol.

Division Officials

Reporting to Mr. McLeod will be

(Turn to CORN PRODUCTS, page 79)

Bio-Zyme to Continue Franchise Program

SHELDON, IOWA — Bio-Zyme, Inc., basic manufacturer of fermentation products, has announced that it will continue a franchise program throughout the U.S. and abroad.

The Sheldon, Iowa, firm formerly purveyed its products through Northern Biochemical Corp.

It is reported that "production of the base fermentation products has continued on an around-the-clock basis."

'Concentrates to Be Considered on Case-by-Case Basis'

DES MOINES — The Food and Drug Administration will consider each feed concentrate containing a new drug on a case-by-case basis, according to a bulletin from the Animal Health Institute.

For some time, it was noted, there have been questions on the status of new-drug concentrates and the situation for local feed mixers using concentrates.

The AHI said FDA officials in recent talks "made it clear that the mixing of some concentrates in feed requires supplemental new drug applications while the mixing of others does not.

"The distinction depends upon the wording of the basic NDA for the new drug. Some NDA's provide for mixing of concentrates containing the new drug into feeds without obtaining supplemental NDA's. The basic NDA covers use of the drug throughout its use. Other NDA's do not provide for the mixing of concentrates into feeds. In these cases, the feed mixer must obtain a supplemental NDA in order to use the concentrate.

"In each case, FDA makes a judgment whether the concentrate containing the new drug in question can safely be mixed by a feed mixer without the agency's checking on the mixer's facilities."

INTERVIEW—Hess & Clark interviewer listens as C. C. Hardy of Hardy's Egg Ranch, League City, Texas, answers questions concerning Hess & Clark's "Full Performance Index" campaign.

Hess & Clark Plans Expansion of 'FPI'

ASHLAND, OHIO—An expanded version of Hess & Clark's Full Performance Index (FPI) program, introduced last year to the feed and poultry industries, will be launched at the American Feed Manufacturers Assn. convention in Chicago, May 6.

Officials of the company, a division of Richardson-Merrell, Inc., said favorable response to the FPI program, which includes the use of nf-180 medicated feeds, indicated in an extensive survey prompted Hess & Clark to broaden the campaign for the coming year.

Russell E. Eshelman, vice president in charge of marketing at Hess & Clark, said: "The FPI campaign for commercial egg flocks provided a theme that feed companies could adapt to promote full performance nutrition, that poultry breeders could use to promote full performance breeding, and that poultry equipment firms could use to promote housing and equipment for full performance environment.

"For poultrymen, FPI provided the basis for a new way to improve flock efficiency by setting up flock performance goals on egg production, feed requirements per dozen eggs, hen house livability and percentage of grade A eggs."

Extensive Questioning

Hess & Clark personnel traveled more than 50,000 miles from New Jersey to California and from Minnesota to Texas, armed with tape recorders, and asked feed manufactur-

(Turn to HESS & CLARK, page 84)

CORN

(Continued from page 4)

USDA officials also say the nature of the distillation process will result in only 60% of the corn consumed producing by-product recovery.

USDA announced last week (Feedstuffs, April 22, page 1) that a tentative program had been developed to sell limited quantities of CCC-owned corn for industrial alcohol production and other products to lessen dependency on imported molasses. Department officials said only processors who used molasses or grain in making acetone, butanol and/or ethanol during the previous year will be eligible to participate.

Intentions are to furnish grain on a monthly basis for a period of one year, with provisions for cancellation of contract on 30 days' notice by either the contractor or the department.

The quantity of grain sold will be limited to amounts needed to produce not in excess of the contractor's normal yearly production of these products, USDA officials said. Processors participating will be prohibited from using molasses for making these products during the period of participating in the program. The contracts will further include certain limitations as to imports of molasses.

USDA officials said about 15% of U.S. production of industrial alcohol products in question are made from molasses and grain. This, they said, is equivalent to about 15 million bushels of corn, the amount of corn which CCC's board of directors last week approved for sale on a bid basis for production of certain types of industrial alcohol. Since then, however, USDA officials have indicated that the quantities of corn to be sold under the corn-alcohol program will be less than the 15 million figure.

Some observers indicate that the 5,000 to 6,000 tons of distillers solubles and dried grains which USDA says is likely to result per month from the corn-alcohol program would amount to more than 60,000 tons in a year's time—or about a fifth or more of the estimated annual production of distillers feeds.

HEARINGS

(Continued from page 1)

as the Cochrane-Freeman bill.

The opening House sessions were touching in the extreme—a veritable love feast between the secretary and Harold Cooley, House committee chairman. News photographers shot them in fond embraces that reminded one of the typical Frenchman's kiss of greeting to a comrade.

However, as the Freeman appearance progressed, the Republican minority shot some poisoned arrows into the Freeman hide, and in some instances drew some significant blood.

Unhappily, the hearings to date, as far as USDA officials are concerned, are not—publicly at least—a revealing and penetrating examination of the government officials as to some of the more obscure aspects of this complicated legislation.

According to Republican critics and even some of the Democratic majority, it appears that the bill basically is little more than a sweeping request for broad grants of discretionary authority in the hands of a secretary of agriculture with the only demonstrable restriction that he may not raise the price support for any commodity above 90% of parity.

However, it must be remembered that the farm law does provide, when acting in the national interest, that a secretary of agriculture may raise the price support level to any point he considers necessary.

Orders, Agreements

The vehicle which USDA evidently plans to use to implement the Cochrane-Freeman goals is the use of marketing orders and agreements which would effect the supply-management concept which President Kennedy has repeatedly mentioned in his comments on the farm program.

They mean, virtually, that rigid controls are the necessary instrument to maintain the supply management equation.

Hand in hand with the marketing orders and agreements the omnibus bill would provide for additional authority—discretionary in the hands of the Secretary for the use of production controls such as acreage allotments, purchasing of excess production from compliers and the use of the compensatory payment plan when necessary to maintain the market price for a commodity.

One of the big defects of the House hearings is that they carry deep political overtones and do not dig searchingly into the hidden powers which this omnibus bill provides, as it amends several basic farm laws.

Margin Controls

It is feared that the amended procedure for use of marketing orders and agreements may provide for not only production and shipments of farm commodities—of which there are 256—but it also is interpreted in some quarters that the amended law will authorize margin controls on processors of a farm commodity or that it would permit processors of a commodity to fix margins and give them immunity from anti-trust law violations.

This is an obscure point in the amending legislation but, nevertheless, one which the feed industry should consider of major importance.

In many respects, one may reasonably fear that this extension of the supply-management concept is little short of price controls through margin agreements at the first processing level.

Poultry Mentioned

Of some major significance to the feed industry were the repeated comments of Secretary Freeman before the House committee this week as he determined the potential operation of marketing orders and agreements under the omnibus bill using poultry and turkeys as an example.

The secretary intimated that those industries with depressed income levels and larger production might be the object of marketing orders on either a regional or national basis. As is well known, regional poultry groups have appeared here in the past to ask government controls to boost their income.

The legislative outlook is now obscure. The House gives reason to believe that it may not wish to abdicate its authority over legislation by granting Secretary Freeman the full discretionary authority he asks. And there may be sharp resentment on the part of urban Congressmen against the price fixing potential which may be hidden in the proposal.

It has been learned from the House committee that it probably will not report any measure for at least three weeks.

FOR LATE RESERVATIONS

CHICAGO—Interest in the American Feed Manufacturers Assn. convention and the National Feed Show, being held May 7-10 at the Conrad Hilton Hotel in Chicago, has stepped up, but persons who have not yet made reservations at the hotel may still do so if they act promptly. Officials report that the Conrad Hilton still can take a few reservations.

It is suggested that those who may not have made room reservations call or wire the hotel (not the AFMA office) right away. They should contact Jack Loftus, reservations department, Conrad Hilton Hotel, Chicago, Phone WAbash 2-4400.

American Feed Manufacturers Assn. Convention and National Feed Show

May 7-10
Conrad Hilton Hotel, Chicago

Sunday, May 7

Registration, noon to 6 p.m., Lower Lobby.

"Advance Look" at National Feed Show, noon to 6 p.m., Exhibit Hall.

Monday, May 8

Registration desk open, noon to 6 p.m., Lower Lobby.

National Feed Show, 9 a.m. to 6 p.m., Exhibit Hall.

AFMA Committee Meetings

—Open Meeting of Committee of Purchasing Agents, 10 a.m., Parlor B, Williford Room.

—Closed meetings of Board of Directors, Nutrition Council, Executive Traffic Committee, Sales Council Executive Committee.

Open meeting on feed control problems, sponsored by AFMA and Association of American Feed Control Officials, Beverly Room, 8 p.m.

Tuesday, May 9

AFMA Speaking Program, 9:30 a.m. to 12:15 p.m., Grand Ballroom.

—W. E. Glennon, AFMA president, "Roadmaps Are Not Free."

—E. A. Epps, Jr., AAFCO president, "The End of a Beginning."

—Presentation of:
Newly elected AFMA board members and officers.
Three college nutrition research award winners.

—Dr. C. B. Ratchford, University of Missouri, "We Three."

—Cameron Hawley, lecturer and author, "The Man in Management."

Invitational luncheon, 12:15 p.m., Williford Room.

Feed Show, noon to 6 p.m., Exhibit Hall.

Social Reception, "The Best of Broadway," 5:30 p.m., Grand Ballroom.

Wednesday, May 10

AFMA Speaking Program, 9:30 a.m. to 12:15 p.m., Grand Ballroom.

—Panel Discussion, "Who's Who vs. Who's Left in Feed Distribution."
Don Butler, Creative Service Associates, moderator.
Paul Cory, Moorman Mfg. Co., direct selling.
Robert E. Miller, Beacon Milling Co., dealer distribution.
Dr. R. J. Mutti, University of Illinois, on-farm mixing.

—Announcement and presentation of two national winners of:
Animal Agriculture Award for Farm Magazines.
Animal Agriculture Award for Farm Directors

—Dr. W. Lyle Fitzgerald, The Quaker Oats Co., "All Join Hands and Circle Left."

—H. V. Kaltenborn, radio news analyst and author, "We Look at the World."

National Feed Show, noon to 3 p.m., Exhibit Hall.

AFMA

(Continued from page 1)

who cannot, the show will be open Sunday afternoon and no registration charge will be made.

(See convention and show schedule details on page 8.)

AFMA officials say that, based on advance registrations and hotel reservations, registration for the convention and show is expected to total well over 2,000.

There has been an additional upsurge in exhibitor interest in the show, officials noted, and the exhibit hall in the hotel will be filled with more than 100 exhibits of feed and grain industry machinery, equipment, ingredients and other supplies and services.

Exhibits of "everything new" in the industry are promised for feed men from operations of all sizes and types.

Convention Theme

The convention theme this year is "Patterns for Leadership," and industry leaders and special guest speakers will present timely information and views of important developments in the industry and in agriculture and business and on the world scene.

In addition to the convention speaking program on Tuesday and Wednesday, there will be two special open meetings on Monday, May 8. The AFMA committee of purchasing agents will hold an open meeting at 10 a.m. And a special open meeting on feed control problems, expected to be of special interest at this time, is scheduled for Monday evening at 8 p.m. Closed meetings of various AFMA committees also will be held on Monday.

Speaking Program

The speaking program on Tuesday, May 9, will open with talks by W. E. Glennon, AFMA president, and E. A. Epps, Jr., president of the Association of American Feed Control Officials. Dr. C. B. Ratchford of the University of Missouri, discussing the role of the college, will be another speaker.

Two of the special guest speakers this year will be Cameron Hawley and H. V. Kaltenborn. Mr. Hawley, well known author of "Executive Suite" and "Cash McCall" and other books, will present an analysis of management techniques. Mr. Kaltenborn, noted news analyst, will outline forecasts and trends on the world scene.

Another special talk will be an analysis of proposed federal legislation and its effect on animal agriculture by Dr. W. Lyle Fitzgerald, manager of economic research for the Quaker Oats Co.

One of the highlights of the convention will be a panel discussion on developments in feed distribution, led by Don Butler of Creative Service Associates. Panel members will be Paul Cory, Moorman Mfg. Co., direct selling; Robert E. Miller, Beacon Milling Co., dealer distribution, and Dr. R. J. Mutti, University of Illinois, on-farm mixing.

The program also will feature presentation of winners of AFMA nutrition research and animal agriculture awards. The big social reception will take place Tuesday evening.

Now in commercial use by farmers, SILOTRACIN again proves to be low-cost silage insurance

Thousands of satisfied users report Silotracin, new silage preservative with antibiotic action, prevents spoilage – protects proteins – stops offensive odors.

For several seasons Silotracin has been tested exhaustively both in laboratory and college field trials on grasses of all types. Now, after 12 months of everyday use on the farm, the farm reports are in. These reports confirm, emphatically, that the selective antibiotic action of Silotracin eliminates guesswork; that Silotracin reduces shrinkage, minimizes spoilage and loss of nutrients, stops offensive odors.

"Steers consumed almost twice as much" reports one farmer. "This is the most palatable silage we have ever fed" writes another. Again, "The silage has a mild, pleasant odor." These are the views of farmers who have *used* Silotracin, who have discovered for themselves how Silotracin—the first silage preservative using antibiotic action—helps make their silage more profitable.

Silotracin goes right to work as you fill the silo, works in the critical first 72 hours. It delivers these important advantages:

1 – Protects valuable forage proteins because its selective inhibition of protein-destroying bacteria reduces ammonia production.

2 – Reduces spoilage because antibiotic action encourages 'preserving' organic acids (lactic, acetic, propionic) needed for high quality silage.

3 – Ends offensive odors because butyric acid is virtually eliminated.

4 – Keeps silage fresh for many months.

5 – Antibiotic is destroyed before silage is fed – no traces appear in the milk.

6 – Completely safe for animals and humans, does not irritate eyes, nose or throat.

7 – Non-corrosive, will not harm machinery or equipment because it produces no sulphur dioxide.

Remember though, as good as Silotracin is, it does not lessen the need for effective packing and sealing of the forage from air invasion. Preservatives are no substitute for good management.

Silotracin is available only to feed manufacturers in two forms; a.) Silotracin Ready-to-Use – containing 1 gram specially processed zinc bacitracin antibiotic per pound. b.) Silotracin Concentrate – containing 40 grams specially processed zinc bacitracin antibiotic per pound.

For full information, write Animal Nutrition Department, Commercial Solvents Corporation, 260 Madison Avenue, New York 16, N. Y.

The use of Silotracin for silage preservation is covered by U.S. Patent 2,940,857.

COMMERCIAL SOLVENTS CORPORATION CSC

New Ideas Brought Out

A Report on the 1961 Informal Poultry Nutrition Conference

PART 1

- **Pigmentation of Poultry Products**
- **Calcium, Phosphorus and Trace Minerals**
- **Fatty Acids and Fats**

By Dr. J. R. Couch
Texas A&M College

Dr. J. R. Couch

The program of the 1961 Informal Poultry Nutrition Conference was divided into two different types of discussions. The afternoon session was concerned with three papers on "pigmentation of poultry products," four on "fatty acids and fats," and four on "calcium, phosphorus and trace minerals." The evening session consisted of a panel discussion on "amino acid nutrition." There were eight participants, three of whom discussed growth; two, essential amino acid nutrition, and two, laying hen nutrition. The final paper was concerned with "nutritional stress." Fifteen of the presentations were from universities and state colleges and four were from commercial laboratories.

The reader's attention is directed to the fact that a few really new ideas came out of this conference. One is the possible development of pigmentation products through either chemical or biological synthesis. Furthermore, according to the author's survey, this is the first time an uncomplicated vitamin E deficiency has been produced in the laying hen sufficient in degree to stop egg production, decrease fertility and have a more definite effect on hatchability and embryonic development than has heretofore been reported. In another report, a copper deficiency was produced through zinc antagonism, and a description of this phase of nutrition was given.

New ideas which were brought out during the "amino acid nutrition" discussion consisted of the importance of non-essential amino nitrogen and a discussion of the possible mixtures of amino acids for growing chicks which would more nearly attain the levels of growth obtained with mixed proteins. The amino acid silhouette for the evaluation of amino acid balance is also a new idea. Finally it was definitely pointed out that sesame oil meal supplemented with lysine contains a superior combination of amino acids to that of soybean oil meal. It was also brought out during the discussion that it is the absolute intake of amino acids, rather than the concentration of the amino acids in the diet, which is of significance. (The amino acid papers will be reviewed in the May 6 issue of Feedstuffs.)

PIGMENTATION OF POULTRY PRODUCTS—There were three papers on "pigmentation." The first of these was presented by William Marusich of Hoffmann-LaRoche, Inc., Nutley, N.J., and was concerned with "Canthaxanthin as a Broiler Pigmenter." Canthaxanthin has been found in the natural state in mushrooms and has been synthesized by Hoffmann-LaRoche. From the presentation given by Mr. Marusich, it looks like a possible broiler pigmenter.

Laboratory studies were conducted with formulas made up of white corn, yellow corn, and yellow corn plus 2½% alfalfa with 3,000 I.U. of vitamin A per pound added to all diets. Peterson cross cockerels were used as the experimental chicks.

Apparently, less canthaxanthin is required for pigmentation than has heretofore been reported from some of the other pigmentation compounds such as xanthophyll, zeaxanthin, and others. For satisfactory pigmentation of broilers, 6 mg. of canthaxanthin per pound was required with the ration containing white corn, 3 mg. for the supplementation of the yellow corn formula and 2 mg. per pound when added to the formula containing yellow corn plus 2½% dehydrated alfalfa meal.

Three - nitro - 4 - hydroxyphenylarsonic acid was used in field studies to enhance the degree of pigmentation. In the field trial, a formula which contained 50% ground yellow corn and 8 grams of canthaxanthin per ton produced good pigmentation.

Mr. Marusich concluded that 4 grams per ton of canthaxanthin would pigment broilers sufficiently when added to a reasonable, practical type diet. When this compound, canthaxanthin, was added to diets for laying hens it produced an orange to reddish-orange egg yolk.

The stability of canthaxanthin was discussed. Dr. Bauernfeind, one of the co-authors of the paper, concluded that reasonable stability could be expected with canthaxanthin. Stability was excellent when the canthaxanthin was supplied in the feed in the stabilized form in beadlets. This is the form in which it was fed in the experiments reported by Mr. Marusich. If the levels of canthaxanthin are too high, a reddish-orange tinge in the skin will occur.

Dried Algae Meal

The second paper on pigmentation was presented by Dr. A. L. Morehouse of Grain Processing Corp., Muscatine, Iowa. The title was "Pigmentation Studies with Dried Algae Meal." The dried algae cells were produced by heterotrophic fermentation. The dried cells contained 32% protein, 4% fat and 4% crude fiber. The principal point about the dried algae cells was the fact that the product contained 250 mg. of beta carotene and 1,000 mg. of xanthophyll per pound. In comparison, Dr. Morehouse pointed out that dehydrated alfalfa meal contains 130, corn gluten meal 60, and ground yellow corn 10 mg. xanthophyll per pound.

Eighty-five per cent of the xanthophyll in the dried algae product was retained at room temperature for a period of six months. This illustrates the stability of lutein which was the principal compound in the dried algae products. From one-half to three-fourths of the total pigmentation properties of the dried algae cells is in the form of lutein.

The chicks in Dr. Morehouse's studies were depleted on a barley diet for a period of five weeks and then placed on a milo diet with various supplementations for a period of four weeks—for a total experimental period of nine weeks. The diets used in this study were: (1) basal, (2) a diet composed of 1% alfalfa, ½ corn and ½ milo to make up the grain portion of this formula, and (3) a diet composed of all ground yellow corn with 1% alfalfa.

The conclusions from the study were to the effect that pigmentation was directly proportional to the level of dried algae meal or lutein in the formula. The dried algae meal produced greater pigmentation than did dehydrated alfalfa meal, corn or corn gluten meal on a beta-carotene equivalent basis. Dr. Morehouse showed comparative data where dried algae meal was given an arbitrary pigmentation value of 100. Under these circumstances, corn gluten meal had a value of 84, ground yellow corn 75, and dehydrated alfalfa meal 58. Such observations are in agreement with earlier reports. Thus it was apparent that the dried algae meal was the most efficient of the pigmentation sources supplemented to the diet of broilers.

The Grain Processing Corp. workers also added the algae meal to laying diets at levels of 0, 5, 10 and 20 mg. per pound. The NEPA numbers of yolks produced were as follows for the supplementations indicated: 1.5, 2.8, 3.3 and 3.9.

Wisconsin Report

The third paper in this series was presented by Dr. M. L. Sunde, University of Wisconsin, and was concerned with "The Effect of Vitamin A and B Apo-8'-Carotenal on Yolk Color." At the beginning of Dr. Sunde's presentation, it was pointed out that farmers had brought downgraded eggs in to the University of Wisconsin in the fall of 1960. These eggs had been graded down to the B grade apparently due to excessive yolk pigmentation. This was possibly due to the use of new corn in formulas or to the consumption of new corn by the hens on the farms. At any rate, eggs sold by these farmers had been graded down to grade B and thus a loss in income had resulted.

This led Dr. Sunde into the investigation which was reported. Figures were given to the effect that 1% dehydrated alfalfa meal was equivalent in pigmenting properties to 6 to 7% ground yellow corn. Furthermore, Dr. Sunde pointed out that corn contained 11 mg. xanthophyll per pound, and alfalfa 120 mg. per pound; therefore it can be stated that alfalfa has approximately 10 times the xanthophyll activity content of ground yellow corn, indicating that corn is a better pigmenter than alfalfa on an equivalent xanthophyll basis. This agrees with the report by Dr. Morehouse.

Dr. Sunde observed that high levels of vitamin A, 10 to 20 times the normal usage level, depressed egg yolk color. The levels of vitamin A used ranged from 25,000 to 125,000 I.U. of vitamin A per kg. The lowest level in this case is somewhat higher than is found in practical usage in the feed trade. Thus the writer would not anticipate that high levels of vitamin A in present usage would be a factor in depressing egg yolk color in the field.

Dr. Sunde also reported on the use of Beta-Apo-8'-Carotenal on egg yolk color. This compound has been synthesized and was provided by Hoffmann-LaRoche, Inc. It offers a possible egg yolk coloring compound which might be used commercially in the feed trade in the future. Six mg. of Beta-Apo-8'-Carotenal per pound was equivalent to 5% of dehydrated 20% protein alfalfa meal.

Dr. Sunde implied that high levels of vitamin A might be used to decrease the egg yolk coloration in cases where there is an excess of pigment being deposited in the yolk and the farmer's eggs are being down-graded because of the excessive yolk pigmentation.

In summarizing these three papers, it appears that two new possible pigmentation products have been synthesized chemically and one has been produced by heterotrophic fermentation. It should be pointed out that such products are not available on a commercial basis and probably will not be for another 12 to 24 months. Small samples of the products might be obtained for experimental purposes by corresponding with producers indicated in this report. It is also interesting to note that high levels of vitamin A would depigment egg yolks and this again might be used commercially where eggs are being down-graded due to excessive pigmentation.

FATTY ACIDS AND FATS—The next series consisted of four papers concerned with antioxidants and vitamin E, the delay in sexual maturity of pullets caused by Sterculia-foetida oil, the effects of oleic and linoleic acids on the absorption of long chain saturated fatty acids in the chick, and the effect of dietary protein level on fat synthesis and dietary requirement by chicks.

The first of these papers was presented by Dr. R. S. Gordon, Monsanto Chemical Co., St. Louis. The subject of Dr. Gordon's paper was "Effect of Antioxidants and Unsaturated Fatty Acids on Reproduction in the Hen." In this presentation Dr. Gordon provided the first evidence to the effect that vitamin E or an antioxidant is necessary for egg production and fertility in the chicken hen. It has been reported many times in

EDITOR'S NOTE: *This is the first of two reports summarizing and commenting on papers presented at the 1961 Informal Poultry Nutrition Conference, held in Atlantic City. This report deals with papers on three topics—pigmentation; fatty acids and fats; and calcium, phosphorus and trace minerals. The second article of the two-part series, covering papers on amino acid nutrition, will appear in the next issue of Feedstuffs. Dr. Couch is a professor in the poultry science department at Texas A&M College, College Station, Texas.*

the past that vitamin E is necessary for hatchability and for the prevention of encephalomalacia in the chicken; likewise, the vitamin is necessary for hatchability in the turkey. Dr. T. M. Ferguson and co-workers at the Texas station did considerable work on the effect of vitamin E on hatchability and described the embryonic anomalies associated with a deficiency of the vitamin in the breeding turkey.

Dr. Gordon used an oxidizing type of diet containing a high level of unsaturated fatty acids (primarily linoleic) in these investigations. Dietary treatments used consisted of feeding the basal, 20 I.U. of vitamin E per pound, 100 I.U. of vitamin E per pound, .075% Santoquin, 10% tallow and a combination of Santoquin with the vitamin E. A higher level of Santoquoin, .3%, was also used in a subsequent study. The hens were artificially inseminated with mixed semen. Fertility decreased to less than 30% on the basal diet. The highest level of Santoquin, .3%, with vitamin E was necessary to bring the fertility back to normal. Three-tenths per cent of Santoquin alone prevented the drop in hatchability which was observed on a practical diet. Vitamin E likewise prevented the drop in hatchability. In evaluating Santoquin and vitamin E on an equivalent basis, Dr. Gordon stated that 10 to 13 times as much Santoquin as vitamin E was required to obtain corresponding results.

The practical significance of the data reported by Dr. Gordon is hard to evaluate. It is possible that Santoquin is acting as an antioxidant both in the diet and in the gut of the chicken. It might also act as an antioxidant in the tissues of the bird. From a practical point of view, however, it can be stated that this report illustrates the necessity of having a good antioxidant in the formula.

The second report in this series was given by Dr. D. L. Schneider, University of Arizona, Tucson, Ariz., and was concerned with the "Delay in Sexual Maturity of Pullets by Sterculia foetida Oil." A principal component in the oil which probably causes the trouble is sterculic acid. This acid also occurs in cottonseed and may account for some of the bad effects of cottonseed meal on the storage of eggs from hens fed cottonseed meal. The Arizona investigators have published a number of papers concerning this problem.

Dr. Schneider used corn oil and Sterculia foetida oil by administering the oils to hens on a daily basis of 200 mg. per hen per day by capsule. No significant effect was noted when the oils were administered on the weight of the birds, or on feed consumption. The Sterculia foetida oil (SF) retarded sexual maturity and egg production. The gall bladder size and liver weights were increased by SF. The ovary size and the size of the oviducts decreased, and the iodine number of the body fat was decreased from 69.9 in fat from birds fed corn oil to 42.5 of fat from birds fed SF oil. The writer is reminded of investigations carried on by Dr. W. Y. Chang at Texas A&M College in 1951, when Dr. Chang noted an increase in the size of the gall bladder of chicks fed cottonseed pigment glands containing gossypol.

Fatty Acids

R. L. Garrett, Cornell University, Ithaca, N.Y., reported on the "Effect of Oleic and Linoleic Acids on the Absorption of Long Chain Saturated Fatty Acids in the Chick." In the estimation of the writer, the data presented by Mr. Garrett confirmed a number of earlier reports which have been presented before the Informal Poultry Nutrition Conference and the annual meeting of the Poultry Science Assn. during the past two to three years. It has been reported that vegetable oils containing high levels of unsaturated fatty acids have a higher metabolizable energy content (4,200 to 4,400 Calories metabolizable energy per pound) than do saturated fats. The industry has developed mixtures of saturated and unsaturated fats, and likewise methyl esters have been made from various vegetable oil sources, to provide the feed manufacturer and the poultry nutritionist with unsaturated fatty acids.

It has been reported by a number of workers that the utilization of saturated fatty acids is low in the chick. Most of this work has been done at Cornell. Mr. Garrett used stearic and palmitic acids as the saturated fatty acids in the study herein reported. It was stated that the average weights, feed conversion and absorbability of the fats increased as the level of unsaturated fatty acids was increased in the diet. This report provides an additional basis for the feed manufacturer to use fats containing unsaturated fatty acids. These may be provided from vegetable oil sources, from methyl esters made from vegetable oil sources, or by mixing animal and vegetable fats. The principal point brought out in this paper in the estimation of the writer is that in order to obtain best results with fats in poultry feeds, it is wise to use some unsaturated fatty acid sources.

Effect of Protein Level

The fourth paper in this series was given by Dr. J. E. Marion on the subject of "Effect of Dietary Protein Level on Fat Synthesis and Dietary Requirement by Chicks." High protein and low protein diets with and without 5% corn oil in the diet were fed. The liver lipids content was highest in livers from birds fed the low protein diet, and was decreased by the addition of 5% corn oil to the diet. It was postulated that the reason for the protein affecting fat requirements was that when a low protein level was fed, less protein was available to the animal for fat synthesis.

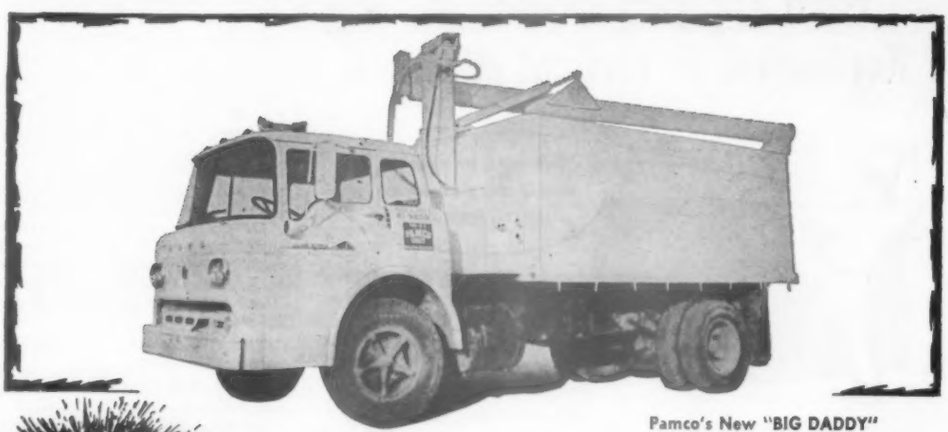
Dr. Fisher from Rutgers University commented at the end of Dr. Marion's presentation to the effect that fatty livers in chickens are due to an accumulation of saturated fatty acids in the liver.

CALCIUM, PHOSPHORUS AND TRACE MINERALS—The third series of papers given during the afternoon session of the conference included reports on calcium, phosphorus and trace minerals.

J. C. Fritz, Dawe's Laboratories, Inc., Chicago, gave the first paper, on the subject, "Observations on the Calcium and Phosphorus Requirements of Growing Chickens and Turkeys." Mr. Fritz used 10 poults per group in the turkey studies and two groups of 10 chicks each in the chick studies. All studies were carried out in batteries with raised screen floors. A practical type of feed formulation was used with both chicks and turkeys. From the results of Mr. Fritz's investigations, it was concluded that the turkey poult requirement and the chick requirement for calcium was .6% and for phosphorus .6%. This is total phosphorus.

The writer seriously questions the use of such low levels of calcium and

(Turn to NUTRITION, page 77)



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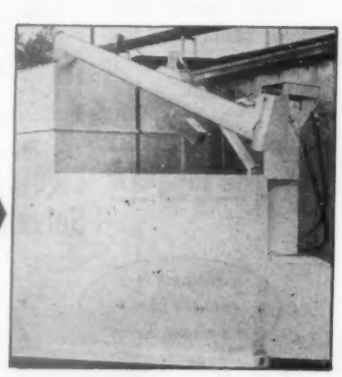

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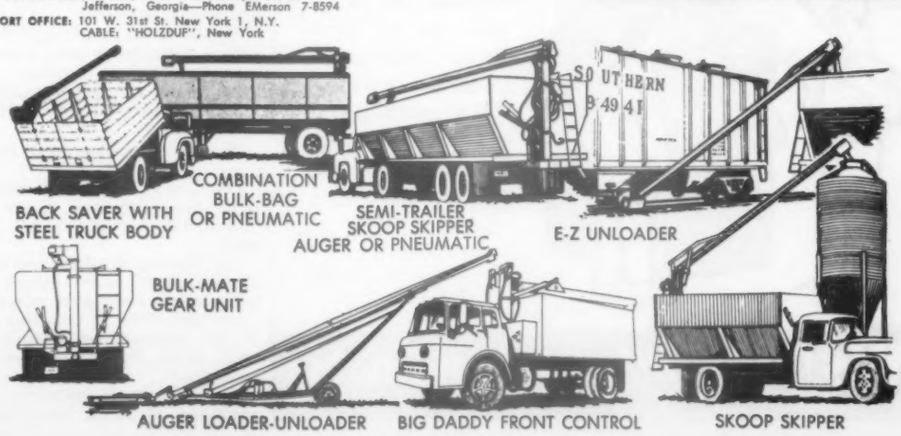

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Nebraska Test Shows Hormones Give Leaner Beef, Fast Gains

LINCOLN, NEB. — University of Nebraska research indicates that implanting with two natural-occurring hormones may produce leaner beef and faster gains.

These findings were reported by Dr. J. K. Matsushima, professor of animal husbandry, at the recent 49th annual University of Nebraska Feeders Day.

Among the other topics discussed at the Feeders Day were: "The Effect of Different Grinds in Pelleted Rations," "Protein and Energy Requirements for Bred Heifers," "Dried Beet Pulp and Corn for Fattening Cattle," and "Antibiotics in Creep Rations for Beef Calves."

Dr. Matsushima said that the two hormones used in the testing were testosterone and thyroxine. He noted that while they produce leaner carcasses, there is no decrease in marbling or the quality of the carcass. "Furthermore," he commented, "the steers implanted with both hormones gained 7.5% faster with 3.5% less feed than untreated steers."

He pointed out that when the two hormones were used separately responses in feed lot performance were not as great as for those implanted with both hormones.

Dr. Matsushima explained that testosterone is a male hormone which stimulates growth. He noted that ordinary bulls grow faster than steers and said this faster gain is probably due to the hormone testosterone. He said that research has shown that when bulls are fed a fattening ration their carcasses are leaner and the fat cover or rind thinner than carcasses from steers fed a similar ration.

"Thyroxine," he said, "is a hormone produced in varying quantities by the thyroid gland. Its major function is to regulate rate of metabolism. If the usage of nutrients in feeds is associated with the metabolic rate, this could determine how much fat is deposited in the body. Also, it could have an effect on the location and the rate at which fat is deposited at different parts of the body."

Dr. Matsushima said that 106 steers were included in a 270 day feeding test to determine the effects of the two hormone implants in the production of leaner beef carcasses. Another objective of the experiment was to determine the effects of the implants on the feed lot performance of the steers. The two hormones were used singly and in combination. Levels of hormones used in this experiment were 40 mg. L-thyroxine and 100 mg. testosterone enanthate.

The Nebraska researcher said that there appeared to be some advantage in implanting with testosterone about six weeks after birth. It was also noted that reimplanting with the same hormone, at a higher level at weaning time or possibly the carryover effect of the initial implant, increased the feedlot gains slightly.

THE EFFECT OF DIFFERENT GRINDS IN PELLETED RATIONS—Dr. Donald Clanton, assistant professor of animal husbandry, said this study showed that the effect of the size of grind before pelleting had little effect on the digestibility and efficiency of all-pelleted cattle finishing rations. The regrinding of a pelleted ration reduced its palatability but not its nutritive value, he said.

Dr. Clanton said these findings resulted from a 140 day feeding experiment to determine if the preparation of a cattle feeding ration has any effect on its digestibility and feed efficiency.

The five rations used were prepared as follows:

(1) Ground through a ⅛ in. screen and pelleted.

(2) Ground through a 2/8 in. screen and pelleted.

(3) Ground through a ⅜ in. screen and pelleted.

(4) Ground through a ⅜ in. screen, pelleted and reground.

(5) Ground very coarse and not pelleted.

He said that the rations contained 67% No. 2 yellow corn, 25% suncured alfalfa hay, 2.5% soybean oil meal, 5% molasses and 0.5% dicalcium phosphate. He also noted that chromic acid was fed in the ration and the grab sample technique was used for collecting fecal samples to determine the apparent digestibility of nutrients in rations.

There was no difference in rate of gain or efficiency of feed utilization between treatments, he commented. However, he noted that there was a high variation between animals within ration treatments. He said that in these cases what had appeared to be an increase in gain and efficiency was animal variation.

He also noted that frequently more animal variation is seen when feeding pelleted rations because some animals do not eat pellets readily and some animals encounter digestive disturbances.

The following were noted from the tests:

(1) It can be concluded that there is no direct difference in the ability of the different rations to produce gains.

(2) The fine grinding may have an adverse effect on the digestive system which in turn could reduce gains.

(3) The effect of different grinds on the physical and chemical properties of the digestive system should be studied.

(4) With the exception of the digestibility of crude fiber, grinding and pelleting had no effect on the digestibility of the rations.

(5) Regrinding the pelleted ration lowered the digestibility of all the nutrients except crude fiber; however, ether extract was the only one that was significantly lowered.

PROTEIN AND ENERGY REQUIREMENTS FOR BRED HEIFERS—In another progress report, Dr. Clanton said there appears to be a definite relationship between protein and energy requirements during the winter for bred heifers. As yet this relationship has not been determined.

"There also seems to be a definite relationship between energy and reproduction," he reported. "Bred heifers fed the high energy rations outperformed heifers fed low energy rations in most respects.

"Our results also raise the possibility that protein requirements for bred heifers are not as high as we have been led to believe. In fact, we may have over emphasized the importance of protein while disregarding energy. As a result, energy may be the limiting factor in reproduction.

"These experiments will be repeated for several years to obtain additional data."

DRIED BEET PULP AND CORN FOR FATTENING CATTLE—"The bulky characteristic of dried beet pulp makes it an excellent concentrate to use in getting cattle started on feed," said W. W. Rowden. "It can also partially replace corn as an energy feed in a fattening ration and produce very satisfactory gains. When dried beet pulp is substituted for a part of the corn in the ration the cattle will consume less hay than those fed corn as the only source of concentrate."

It was noted that the data from this trial indicate that cattle will perform equally as well on 20% dried beet pulp as 40% dried beet pulp as replacement for corn.

Mr. Rowden said, "Depending on the price of beet pulp relative to corn, a relatively large amount of beet pulp (up to 40% of the corn) can be used and still obtain satisfactory gains."

ANTIBIOTICS IN CREEP RATIONS FOR BEEF CATTLE—Dr. Matsushima said the addition of the same antibiotic mixture in creep rations increased gains in one trial, but not in another. The differences in results were attributed to the loss of antibiotic potency through the pelleting process in one of the trials. The antibiotic mixture included streptomycin and penicillin.

"In the first trial there was no difference in the weaning weight of the calves," he said. "In the second trial, calves fed the creep ration with antibiotics weighed an average of 17 lb. more per head at weaning time than those fed without antibiotic.

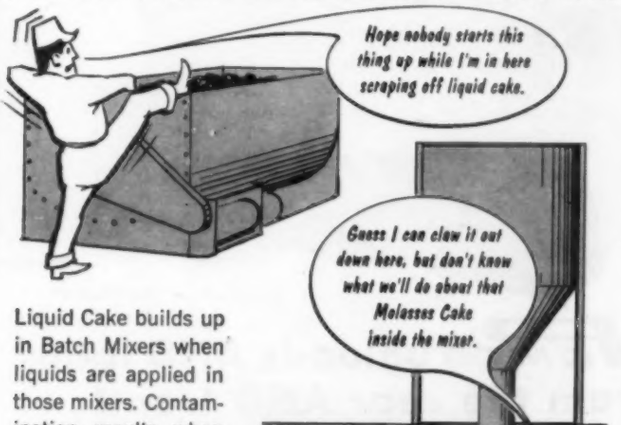
"In addition to the two groups of calves in each of the trials, there was a third group which received no creep feed or antibiotic. The creep-fed calves weighed an average of 46 lb. more per head than the non-creep-fed calves at weaning time.

"The extra weaning weight of 46 lb. was obtained at the expense of approximately 480 lb. of creep feed. If the cost of the creep feed is valued at 2½¢ lb., the creep fed calves would have to return approximately $12 extra per head. This does not include the added expense of hauling the feed to the feeders. If weaning calves sell for $26 per hundred, the additional 46 lb. gained through creep feeding would be worth $11.96. Unless the creep-fed calves are sold at a higher price per hundred, it does not seem economically feasible to creep feed under present conditions."

BOY FOR THE COHENS

TARREYTOWN, N.Y.—I. Roy Cohen, sales manager of the animal nutrition department of Commercial Solvents Corp., New York, and Mrs. Cohen recently announced the birth of a son, David Jonathan.

CONTAMINATION PROBLEMS from Applying Liquids in Horizontal or Vertical Mixers?


Hope nobody starts this thing up while I'm in here scraping off liquid cake.
Guess I can claw it out down here, but don't know what we'll do about that Molasses Cake inside the mixer.

Liquid Cake builds up in Batch Mixers when liquids are applied in those mixers. Contamination results when cake containing contaminants break off in a later batch.

Wenger Liquids Mixing Equipment Solves The Problems

Wenger Mixers, Multi-Blenders, and Pellet Mills may be completely cleaned of liquid cake in 5 minutes by removing the end bell and using the long handled cleaning spade.

Wenger Mixer Manufacturing
SABETHA, KANSAS PHONE AVenue 4-2133

Faster broiler growth at least cost

...planned by the Nutritionist late into the night

OMAFAC-S

The Nutritionist is dedicated to keeping your feed bill down—without sacrificing quality. That's why he often works late hours, frequently using electronic computers to solve complex calculations. To come up with least-cost feeds that give broilers extra push, many Nutritionists include new Omafac-S in their formulations.

The big reason new Omafac-S is used in so many broiler rations is this: Omafac-S contains a new additional fraction which provides an extremely *active, concentrated* source of Unidentified Growth Factors. That's why it takes only 0.35% Omafac-S to replace 4.0%-5.0% of such crude UGF sources as fish solubles and dried whey. The cost of adding UGF is therefore very much reduced.

Omafac-S brings extra *bonus* ingredients to the ration... streptomycin, protein, calcium, phosphorus, vitamin B_{12}. Another reason Nutritionists like Omafac-S is that it is always in dependable supply, all year. Made by Squibb from dried penicillin and streptomycin residues, the analysis on the label is *guaranteed*. Write today for more facts.

Another Dependable Feed Ingredient

For use in *all* feeds, Squibb has developed a special grade of penicillin with *Controlled Particle Size*.[1] Squibb Procaine Penicillin G is extremely stable in both mash or pelleted form. It mixes readily, flows freely, and will not lump or cake.

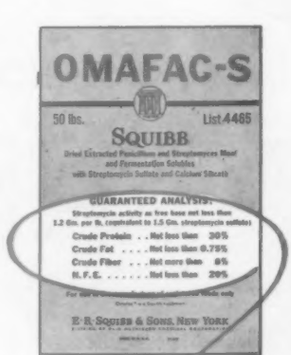
Available as 100% procaine penicillin unmasked by carrier. Also as 80% and 50% in oyster shell meal.

FREE: Send for Technical Bulletin containing stability data, recommended usage, etc. Write today to: Chemicals Sales Department, E. R. Squibb & Sons, Div. of Olin Mathieson Chemical Corporation, 745 Fifth Ave., N. Y. 22, N. Y.

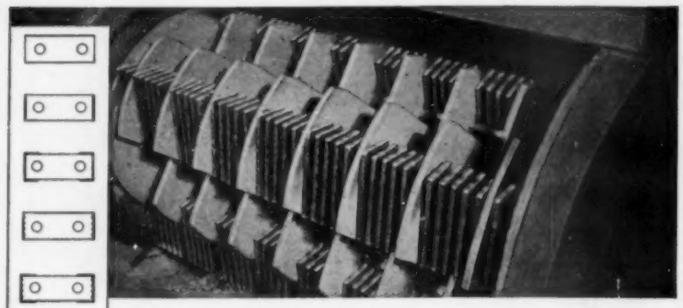
[1] Patent applied for
●"OMAFAC"® is a Squibb trademark

SQUIBB DIVISION Olin

SQUIBB -A NAME YOU CAN TRUST


OMAFAC-S
50 lbs.
List 4465
SQUIBB
GUARANTEED ANALYSIS:
Crude Protein . . Not less than 30%
Crude Fat . . . . Not less than 0.75%
Crude Fiber . . . Not more than 6%
N. F. E. . . . . Not less than 20%
E. R. SQUIBB & SONS, NEW YORK

OMAFAC®-S IS CLEARLY LABELED. Each bag is imprinted like this. Note the guaranteed analysis which lists the percentage of each ingredient to help the nutritionist formulate more efficient broiler rations for you.



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NEW . . . Ask for Pacal's Abrasive Resistant BORALLOY-350 steel sheets and plates for severe production applications. Call or write the Hammer Division.

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DIVISION
F. H. Peavey & Co.

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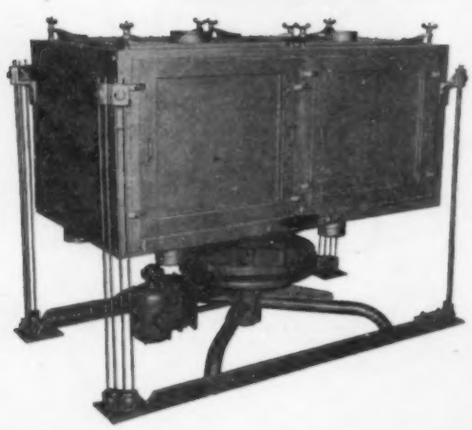
Founded 1852

MINNEAPOLIS DULUTH

Compact
Floor-Mounted
TWO SECTION SIFTER



Now—a floor-mounted two section sifter that is sanitary—durable and economical. Has a steel box, unit type base with individual motor drive. All component parts are engineered for long, trouble-free service. Speed and throw are adjustable to meet the requirements of your stock.

Write for information, specifications and prices on all Nor-Vell products. We will custom build to suit your requirements.

NOR-VELL INC.
FORT SCOTT, KANSAS
The Name That Means Better Sifting

CONTEST WINNERS — Dr. Rollin Thayer (left), Oklahoma State University poultry professor and chairman of the Midwest Feed Manufacturers Assn. subcommittee for the "Agricultural Careers" essay contest, congratulates Howard Lee Avery (center), Keota, Okla., winner of the $50 first prize in the OSU contest, and James C. Raulston, Lucien, Okla., winner of the $30 second prize.

Essay Competition Winners Declared

STILLWATER, OKLA. — Winners of an "Agricultural Careers" essay contest co-sponsored by the Midwest Feed Manufacturers Assn. and Oklahoma State University were declared this week.

Howard Lee Avery, 20, Oklahoma State University poultry science student from Keota, Okla., is winner of the $50 first-place prize. Second-prize winner of $30 is James C. Raulston, 20, of Lucien, Okla., a horticulture student at the university.

Results were announced at the annual OSU College of Agriculture spring banquet on April 17 in the Student Union.

Howard Avery also will receive an expenses-paid trip to the Centennial Nutrition Conference to be held Oct. 21-25 in Kansas City.

His winning essay will compete against winning essays from similar contests held at seven other midwestern land-grant agricultural colleges and universities.

"The eight-state program focuses attention of young people, and the general public, on the wide variety of agriculture-related careers in business and science, as well as on the farm or ranch," said Dr. Rollin Thayer, OSU poultry professor and chairman of the feed association's essay contest subcommittee.

Material from all winning essays, state and regional, will be used in journal articles, TV and radio programs, and other outlets to promote agri-business careers.

The Centennial Nutrition Conference which will be the occasion for regional judging of the "Agricultural Careers" essays is to be held at Hotel Muehlebach. The conference is to be conducted under the sponsorship of Midwest in cooperation with land-grant colleges and universities. The institutions this year commemorate the 100th anniversary of the land-grant educational system.

A booth will be maintained at the conference for distribution of information on careers in agri-business from the eight midwestern land-grant colleges and universities. A room also will be provided for showings of the slide series, "Opportunity Knocks" and of films pertaining to careers in agriculture and related fields.

CSC Net Rises 9%

NEW YORK—Commercial Solvents Corp. consolidated net earnings for the quarter ended March 31 rose 9% over the same period last year, it was reported this week by Maynard C. Wheeler, president.

Net earnings for the quarter ended March 31, were $1,235,262 as compared with $1,133,668 in 1960. Comparative net earnings per share were 43¢ in 1961 versus 40¢ in 1960. Sales for the 1961 first quarter were $15,093,222 compared with $16,213,137 in the first quarter of 1960.

Doughboy Reports Hike In Sales and Earnings

NEW RICHMOND, WIS.—Doughboy Industries, Inc., New Richmond manufacturer of feed and other products, reports that its sales for the year ended Jan. 28 were $24,934,939 and its profits were $523,914 or $3.32 a share on the 134,175 shares of common stock outstanding.

This represents an increase compared with the preceding year's sales of $22,571,912 and earnings of $433,874 or $2.63 per share.

Doughboy has filed a registration statement with the Securities and Exchange Commission in Washington for a proposed public offering of 100,000 shares of common stock (Feedstuffs, April 22, page 85).

Doughboy's preliminary prospectus for the year ended Jan. 28 showed that, under the company's current capitalization, there are 20,000 shares of $15 par 5% preferred stock outstanding, 60,000 shares of class A stock outstanding and 134,175 shares of common stock outstanding. The firm recently increased the authorized common from 300,000 to 500,000 shares.

The financial report indicated also that Edwin J. Cashman, Doughboy president, and his wife and family own 55% of the common shares currently outstanding.

Doughboy has a diversified product line that includes livestock and poultry feeds; semolina and durum flour; plastic swimming and wading pools and toys, and machinery for heat sealing and labeling of plastic sheeting. The firm also conducts grain brokerage and printing businesses and processes and sells poultry, the latter through a subsidiary.

MANAGER NAMED

OSKALOOSA, IOWA—Allen Wilken of Albia will manage the Mahaska Feed & Grain Co. in Oskaloosa. He has been associated for the past nine years with the Goode Seed & Feed Co. at Albia.

It's DANNEN for SOYBEAN OIL MEAL and

- Cottonseed Meal
- Linseed Meal
- Bran and Shorts
- Tankage
- Meat Scraps
- Other Feed Ingredients
- Grain — oats, corn, wheat, rye, barley, soybeans

DANNEN

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Grain and Jobbing Division
St. Joseph, Mo.
Phone: Adams 3-6161

A REPORT ON SILAGE PRESERVATION

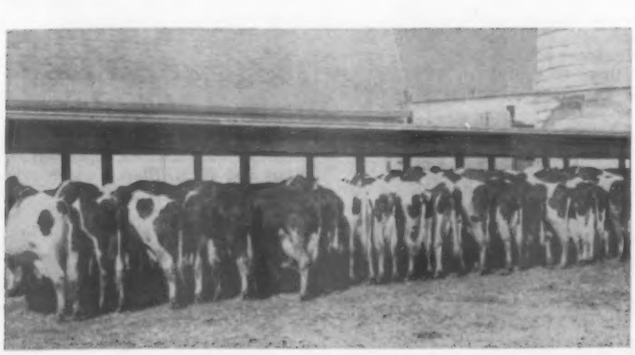
John Schlenker

TAKE IT FROM A MAN WHO KNOWS

. . . Here's the easy, economical, effective way to preserve silage. Do it with Omalass or Scotch O Lass. Make your silage sweet and tasty.

Dairyman Schlenker is one of the thousands of satisfied Omalass and Scotch O Lass customers that know the benefits of using Omalass or Scotch O Lass in their silage.

Schlenker needs the finest to maintain his topflight herd. His average herd consists of 48 registered Holstein cows. Herd Improvement Registry records show butterfat content of 486 lbs. and 13,263 lbs. of milk.



You, too, can have satisfied customers like John Schlenker—when you, too, recommend and sell Omalass and Scotch O Lass like Harry Maurer.

Look at the advantages of the high quality dried molasses products for preserving silage.

- Dry, clean, easy to handle and use.
- Because it's dry, it helps absorb excess moisture.
- In addition to the palatable flavor of molasses, you are also adding nutritional values when using Omalass or Scotch O Lass.
- These nutritional values are retained IN THE SILAGE. While performing the vital role of preserving the silage, keeping it sweet and tasty, you still have 75% of the original nutritional values retained in the silage.
- It's economical, too. Takes only 25 lbs. to preserve a ton of grass silage. Fifty pounds for legumes.

John Schlenker, Wapakoneta, Ohio, began using Omalass for preserving his silage, at the recommendation of his feed dealer, Harry Maurer, manager of the Wapakoneta Farmers Grain Company.

Harry Maurer

YOU SHOULD SELL OMALASS AND SCOTCH O LASS FOR SILAGE PRESERVATION

In addition to the fine mixing qualities and the convenience of these two products for top dressing a feed, you can sell extra tonnage if you recommend it for silage.

Stock and sell...PROFITABLE...OMALASS AND SCOTCH O LASS

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All around, all purpose conveyor for bags, cartons, packages. An economical helper and is available with gas engine power, also electric. You can have steel or aluminum frame. 12-24 ft. lengths, Alemite fittings. Can be had with any of 9 different styles of undercarriages.

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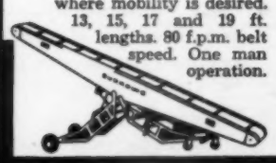
where mobility is desired. 13, 15, 17 and 19 ft. lengths. 80 f.p.m. belt speed. One man operation.



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STATIONARY AND INTRA-FLOOR MODELS
In both straight and nosed over units. Sections can be added or subtracted for desired length.

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Space saver. Ideal for trucks, warehouses and docks. 10 ft. 80 f.p.m. belt speed.

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PENB EXECUTIVE COMMITTEE—Selected to direct Poultry & Egg National Board activities for the coming year, during PENB's 21st annual meeting in Chicago, were, left to right, front row: President, Howard Kauffman, Kauffman Turkey Farm, Waterman, Ill.; treasurer, Ralston R. Hannas, American Poultry Journal, Chicago; Sam Bush, producer, New Port Richey, Fla.; Harry Grant, Wirthmore Feeds, Inc., Waltham, Mass.; immediate past president, Ralph J. Thomas, DeKalb Agricultural Assn.; first vice president, W. J. Moore, Hy-Lay Hatcheries, Inc., Bryan, Texas; secretary, Dr. L. A. Wilhelm, Quaker Oats, Libertyville, Ill.; John R. Hargreaves, Caroline Poultry Farms, Federalsburg, Md., and general manager, Lloyd H. Geil, Chicago. Unable to be in the picture because of illness was second vice president, Chester B. Franz, Chester B. Franz, Inc., St. Louis.

Howard Kauffman Replaces Ralph Thomas As PENB President

CHICAGO — Howard Kauffman, Kauffman Turkey Farm, Waterman, Ill., was elected president of the Poultry & Egg National Board at the 21st PENB annual meeting in Chicago, according to Lloyd H. Geil, general manager. He replaces Ralph J. Thomas, DeKalb Agricultural Assn., Sycamore, Ill., who served in the post for the past two years.

Other officers and members of the executive committee elected are: First vice president, W. J. Moore, Hy-Lay Hatcheries, Inc., Bryan, Texas; second vice president, Chester B. Franz, Chester B. Franz, Inc., St. Louis; treasurer, Ralston R. Hannas, American Poultry Journal, Chicago; secretary, Dr. L. A. Wilhelm, Quaker Oats Co., Libertyville, Ill.; Harry Grant, Wirthmore Feeds, Inc., Waltham, Mass.; John R. Hargreaves, Caroline Poultry Farms, Inc., Federalsburg, Md.; Sam Bush, producer, New Port Richey, Fla., and Mr. Thomas.

The control of PENB is vested in a board of 39 directors with 18 elected to represent egg interests, six to represent turkey interests, six to represent allied industry interests, six to represent poultry interests at large and three to represent broiler interests. Directors serve for a term of three years.

Directors elected for a term expiring April, 1964, are: Dr. George F. Godfrey, Honegger Farms Co., Inc., Forrest, Ill.; Maurice Pickler, Springdale Farms, New London, N.C.; H. G. Mallon, Mallon Poultry & Egg Co., Fairmont, Minn.; Dale Stewart, Madison (Neb.) Cooperative Creamery; Perry Browning, grower, hatcheryman and processor, Winchester, Ky.; John P. Holton, Anderson Box Co., Indianapolis; G. L. Walts, National Turkey Federation, Mount Morris, Ill., and George C. Witteried, National Poultry, Butter & Egg Assn., Chicago.

William Lee Brown, producer, Rio Linda, Cal., was officially seated on the board to fill the unexpired term of L. N. Thompson, who resigned.

Industry Praised

Speaking at the PENB meeting, Dr. Don Paarlberg, Purdue University distinguished professor and former economic advisor to President Eisenhower, praised attainments which have rocketed the poultry industry from a farming enterprise of little consequence to a "powerful juggernaut."

He told the group that "the various segments of the poultry industry will have to learn better how to steer the juggernaut," and that "those who have come to power in the industry will have to exercise that power responsibility." Dr. Paarlberg described these leaders as "the greatest asset the poultry industry has."

PASSING THE GAVEL—The presidency of the Poultry & Egg National Board officially shifted from Ralph J. Thomas, left, DeKalb Agricultural Assn., Sycamore, Ill., to Howard Kauffman, Kauffman Turkey Farm, Waterman, Ill., in a gavel passing ceremony during a luncheon session of PENB's 21st annual meeting in Chicago.

To Make Feed for General Mills, Inc.

CHELSEA, MICH. — The Blaess Elevator Co., Chelsea, operated by Julius and W. K. Blaess, will operate the Michigan Feed Milling Co. This firm will manufacture all feeds for General Mills that are used in Michigan, according to a Michigan Feed & Grain Dealers Assn. bulletin.

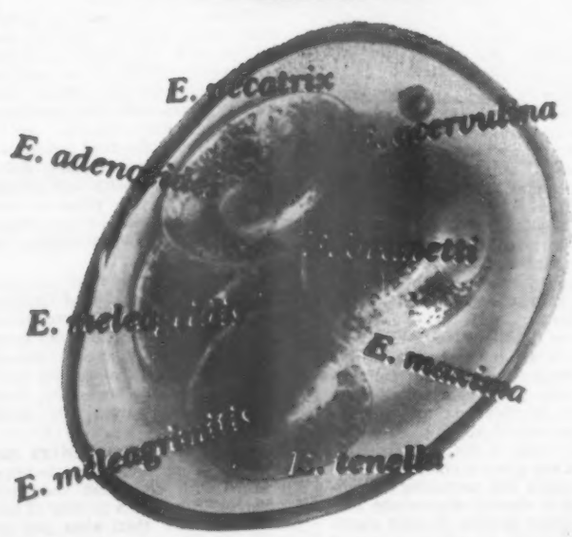
The plant will be a push-button type operation with a 100 ton capacity per eight-hour day. Facilities will include a 16,000 ton warehouse building and bulk bins with 410 tons capacity.

Construction is scheduled to start about May 1, with completion in late June.

NEW FACILITIES

TRENTON, MO.—Hoffman & Reed Farm Supply, Nutrena dealer, recently held an open house in celebration of the completion of new milling and storage facilities. The new facilities combine a 110-ton overhead bulk storage with grinding and mixing, and include four new 7-ton loadout bins for finished feeds, H. Frank Hoffman, manager, pointed out. The new equipment includes a 2-ton Prater mixer and a 9x30 Roskamp roller mill. H. R. Williams Mill Supply, Kansas City, made the installation.

SQ



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No other drug can match the effectiveness, safety, and economy of S.Q. in treating outbreaks of coccidiosis in chicks, poults, pullets—*and* birds in production. Unlike other drugs, S.Q. works best during the all-important 72- to 96-hour period after infection, when coccidia are most vulnerable to medication.

S.Q.—used promptly at therapeutic levels—will check coxy outbreaks . . . cut losses by holding mortality and stunting to a minimum . . . keep flocks on feed until the outbreak is under control.
Merck Chemical Division, Merck & Co., Inc., Rahway, N. J.

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® TRADEMARK OF MERCK & CO., INC., FOR SULFAQUINOXALINE.

What you should know about DOG FOOD

Whether you're in the dog food manufacturing business or have considered putting your label on a dog food, the new Dog Food Ingredient Spec Sheets published by Ralph WELLS & Co. are "must" reading. Each 8½ x 11" sheet covers in detail one of the seven major dog food ingredients manufactured by WELLS; provides full size, full color product photos . . . ingredients features . . . guaranteed and average analyses . . . ingredient breakdown . . . and shipping container data. These spec sheets set standards by which to judge the quality of all your dog food ingredient purchases. They're *FREE* . . . just write to

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SOURCE OF THE BEST—FOR MAN'S BEST FRIEND

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PUBLIC RELATIONS

At the Grass Roots Level

• Employee • Customer • Community • Veterinary • Press

By R. L. Kathe
American Feed Manufacturers Assn.

There is one commodity every company has on the market. Some give it away . . . and often poorly. If such is the case, the commodity is usually worth the value they place upon it . . . nothing. Other firms promote and sell this same commodity and reap a handsome profit.

Regardless of how this product is handled, it is working either for or against all companies—big or small—everywhere in the country, 24 hours a day.

I'm referring to your public and personnel relations. It can be one of your finest products and determine how easily you sell feed, how efficiently you produce and the ease or difficulty with which you live under factors which control us—government, labor, suppliers, transportation and many others.

Public relations can be defined and worked on in just this fashion—the relationships with each of your publics—customers, employees, the press, government officials, legislators, college people—just to name a few.

If you stopped to analyze this problem and separate all of the publics, the list could be never-ending. But it's not really that complicated. When you come right down to it, there are a few publics that need your immediate attention, a few more that should be thought about once in a while, and some more you can take care of if you have time.

But, before we start talking about them and what you can do in your own back yard, and what they can do to your profits, let's shatter a few mistaken notions.

Nonsense No. 1—Public relations is a luxury which can only be afforded by large companies with money to throw away. This notion has been fostered by a few popular books and movies depicting a public relations director in a sumptuous office, reclining on a chaise longue watching two built-in-the-wall television sets. It may be true somewhere, but I've been in many public relations offices and have yet to see it. As a matter of fact, some of the most effective public relations programs I've seen were operated by small companies and with a very modest budget.

Nonsense No. 2—Public relations and publicity mean the same thing. Publicity is certainly an important tool. Needless to say you shouldn't hide your light under a bushel, and if you do something good, the word should get out. Your publicity might be word of mouth, a newspaper story or a radio comment. The public relations started, in this case, when you decided to do something worthy of comment. To believe that public relations and publicity are synonymous is like saying that a hammer and cabinet making mean the same thing. The first is a tool used in the second thing which is a craft.

Nonsense No. 3—Public Relations amounts to good sales promotion. The basic confusion that exists here is that both can be of help in achieving the same end—the sale of more feed. However, all of the sales promotion in the world can spin its wheels if customers do not have faith and confidence in the product or seller. Conversely, good or bad sales promotion efforts can greatly affect your public relations.

Nonsense No. 4—Feed industry public relations problems are national and we can't do much about them locally. While it is true that some public relations problems for feed manufacturers have cropped out nationally (such as the Delaney Amendment) and are being dealt with on a national basis, each and every problem originated on a local level and many of our problems must be dealt with at that point.

It's not that we are not offering help and guidance on a national level. Starting in 1948, AFMA began a modest public relations program and has invested over a half million dollars in the effort. This might sound big but consider that another agricultural industry, less than half as big as feed manufacturing but in other ways most comparable, spends each year as much as AFMA has in 13 years.

Are the feed industry's public relations in bad shape? Have we been derelict in our duty? I don't think so when you consider our size—biggest in the world providing goods and services to agriculture, our complexity and the rapid technological and marketing changes in agriculture. The main reason we're not in worse shape than we are is the great amount of public relations efforts conducted by individual companies and by the state, regional and national associations.

The real question is what are you going to do about it in your own community? Will you let your competitor steal the thunder from out of your sky? How will it be with you when things get tougher than they are today?

So, now, let's get down to brass tacks and talk about what you can do. All of these suggestions will take thought—some will take time—and a few will involve money.

FIRST STEP—BUILD A TEAM—Your employees are your most potent ambassadors of good will or ill will. I do not have a set of rules on how to win friends and influence people, but Dale Carnegie's and other courses are excellent starting places. Nor could I pretend to recommend how you should invest your business funds in fringe benefits, profit-sharing, pension plans, hospitalization and life insurance. Rather, let's think of the things which cost very little or nothing—they're usually the ones that pay off best.

Employee Relations No. 1—Do they believe in what you're trying to do? I'm not suggesting you call a meeting and then give them a half hour lecture on brotherhood and profits. But, a meeting of all employees can be a good thing if it's well directed, employees are given a chance to show progress made and problems encountered, and it doesn't degenerate into a bull or gripe session. At such meetings it's possible to outline a few of your goals and give credit where it's due.

A second method of communicating your goals is a newsletter. A mimeograph page will often be read by more employees and customers than a slick. It has a look of sincerity, simplicity and friendliness. It might also be sent to other groups such as county agents, vocational agriculture teachers, veterinarians and more.

SECOND STEP—CUSTOMER RELATIONS—And the first question you might ask yourself is how the customer is greeted. There may be three other people who get in the first lick at customer relations before you get a chance. In many cases they are the least trained to create the first and most important contact. I'm referring to the truck driver and the persons who answer the phone and wait on the counter if you don't handle these chores yourself.

The matter of handling phone calls can be solved relatively easily. If you have a problem and do not care to train your people, the phone company is more than ready to help with films, brochures and special help. It can mean a real difference in sales for companies where calls have been mishandled.

The truck drivers, counter men and others who come in direct contact with your customers are a more difficult problem. At the least, they should be familiar with your feeding programs, but carrying their education beyond this point has its problems. Should a truck driver overestimate his knowledge of animal disease, attempt to diagnose and prescribe some medicament, when in common sense he should have recommended a veterinarian, you may be in for trouble. It would be ideal to have all truck drivers well trained salesmen and ambassadors of good will. Some companies conduct abbreviated sales clinics with social events, and others send their men to special clinics conducted throughout states on an inter-industry basis. Contests, premiums, quotas and other incentives are often employed. The point I would like to have you remember is that good salesmanship or at least common courtesy by your phone, counter and truck people will help your public relations.

Customer relations can be helped in other ways. I'll run through just a few for your consideration. If you have a fairly modern or presentable mill, it's a natural for a plant tour for vo-ag classes, 4-H clubs and farm organizations. Refreshments and a little story about the feed industry—its growth, development and opportunities for employment—are always good offerings. If your place of business doesn't lend itself to tours, these same groups are always looking for speakers.

Here are some other tried and true techniques: Livestock and poultry feeding and management demonstrations set up in cooperation with vo-ag teachers and county agents, awards to champion animals at county fairs, youth projects with bred gilts, dairy heifers and fat calves and many more.

THIRD STEP—COMMUNITY RELATIONS—And, under this heading, I'll start with civic and charitable campaigns. Here it's a matter of how you do it rather than what you are not doing. I'll assume that most, if not all, of you are contributing your fair share of financial support to community enterprises. But, how this is done makes the difference. A little

EDITOR'S NOTE: The accompanying article is from a talk presented by Mr. Kathe, director of public relations, American Feed Manufacturers Assn., Chicago, at the Pacific Northwest Feed Mill Production School.

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RADIO, TV FARM DIRECTORS—Recently five television and radio farm directors from five different farming regions of the U.S. were guests of the Ralston Purina Co. in St. Louis. They were invited to Checkerboard Square to discuss the role of radio farm directors in agriculture today and in the years ahead, and to exchange ideas with Purina's advertising people. The farm directors are pictured here facing the camera. Left to right, they are: Alden Aaroe, WRVA, Richmond, Va.; Dewey Compton, KTRH, Houston, Texas; Dick Wood, Ralston Purina Co.; Lyle Hansen, WNAX, Yankton, S.D.; Harry Martin, WFBM, Indianapolis, Ind.; and John McDonald, WSM, Nashville, Tenn.

story from northern Ohio illustrates my point.

One of the best public relations men I have even seen was an outspoken Lithuanian farm equipment dealer in a German area. If anybody ever had two strikes against him, Omar was that man. The reason nobody ever called the third strike before he hit a home run was that Omar's boundless enthusiasm was always available for any community project that needed help. Those Dutchmen were just overwhelmed. Community service paid off. His humble dealership grew to be one of the largest in the U.S. His showroom grew to be one of the community's show places.

Omar probably did not contribute much more than an average amount of cash to these projects but his enthusiastic support and leadership earned a place at the head table or a kind word from the toastmaster at each banquet.

In addition to the usual civic and health campaigns and drives, there are a couple of relatively new nationwide efforts which are directly related to your business. If either one or the other is not active in your area, you might consider promoting them and becoming identified with the good causes. One is the Farm-City Week, started seven or eight years ago, and the other is the three-year-old National Food Conference. Both depend for their success on local effort and I'd be glad to give you details on how to get either one started in your area.

FOURTH STEP — VETERINARY RELATIONS — Several years ago, one of the midwestern feed companies surveyed several hundred veterinarians. Results of the survey are still true today.

For example, to the question, "Are you well acquainted with all feed dealers in your community?" — 147 said yes, 103 said no, and 206 said some. The survey indicated most of these acquaintanceships came about by chance.

Asked whether feed dealers or service representatives come to the veterinarians on problems of animal health, the answer was 3 to 1 in the negative.

Asked if the veterinarians feel that feed men overstep their bounds in encroaching on the veterinarians' field of service, the answer was 12 to 1 yes.

This data may not be surprising but what can be done in your local community to overcome it? One salesman I know of has a unique plan. In his farm visits, he will occasionally spot a disease problem not recognized by the farmer. In such cases he will offer to pay the $5 veterinarian fee as a friendly service. He is careful to recommend at one time or another, each of the leading vets in his territory. The farmer is glad to get the trouble eradicated. The veterinarian appreciates the call and the wisdom of the feed man. The feed salesman knows the farmers and veterinarians won't blame his feed when disease is at fault. He figures the annual average $60 expenditure has paid off, and the company figures show him to be one of its top salesmen.

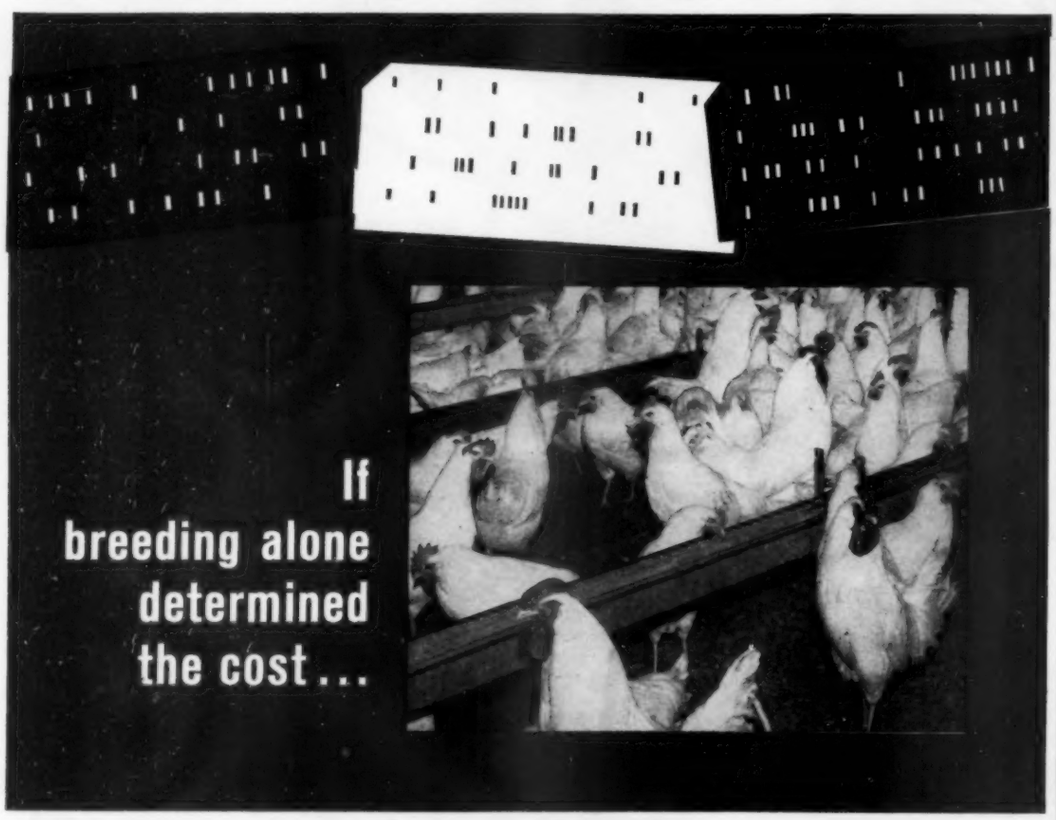
Regular meetings by all feed men and all veterinarians in a county can lead to frank and helpful discussions if they do not degenerate into sessions of open hostility.

So far, we have looked at four areas of public and human relations which I feel are the most important at the grass roots level—employee, customer, community and veterinary relations. Also included were some suggestions for working with county agents and vo-ag teachers. Perhaps you are one of the fortunate few who are doing a good job in each category. Unless your competitor is doing an equally good, or better job, you should have certain definite advantages:

The efficiency of your employees should be higher, thanks to better morale, and your production, sales and business management costs should be lower.

Your sales efficiency and ability to overcome any community obstacles should be better, thanks to better customer, community and veterinary relations.

If such an excellent and rare condition exists in your firm, then you



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To develop commercial layers like these required a proven breeding program. This costs a lot of money. Breeding, however, is not the only cost in a pullet. There is always the cost of distribution which has nothing to do with increasing your profit. So we found a way to distribute more efficiently. We already maintained our own farms in every important egg-producing area with plenty of room for strain cross breeder flocks. With these we eliminated much of your hatcheryman's overhead. He saves and passes the saving along to you. The way today's Queen is performing you're still ahead at housing time and throughout the laying year. Does it make sense to pay more for your replacements when there's an Arbor Acres Queen hatcheryman nearby? Better call him right away.

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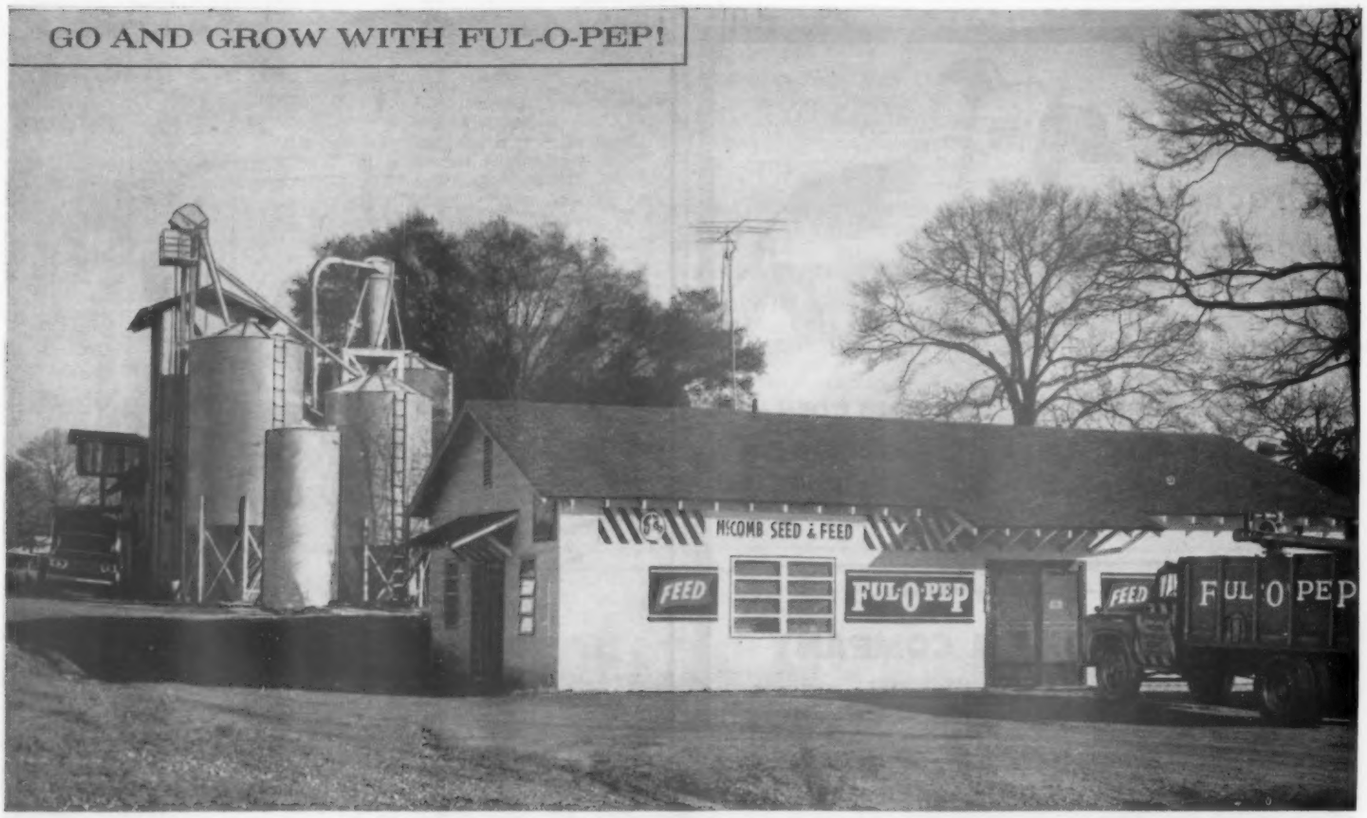

Experienced Ful-O-Pep engineers helped McComb Seed & Feed plan this efficient installation, with minimum outlay. Bin capacity includes 45 tons corn, 10 tons ground corn, 25 tons oats, 30 tons Ful-O-Pep Broiler Concentrate, and 30 tons Dairy Concentrate. The Quaker engineers suggested ground corn bins instead of more shelled corn bins, Mr. Boutwell said. Thus, the mill crew can grind corn at slack times, and level out their work-load.

"Tonnage climbed 50% in 2 years

...when we went bulk with Ful-O-Pep!"

—says G. A. Boutwell, McComb Seed & Feed, McComb, Miss.

"Our new bulk installation helps keep costs of feed down for our customers," says Mr. G. A. Boutwell, of McComb Seed & Feed, McComb, Miss., who put in bulk facilities 2 years ago. "Our tonnage has climbed up and up—roughly 50%—and it's still on the upgrade," smiles Mr. Boutwell. "The era of bulk feeding is already here," he believes, "and Quaker was the first in this area. The dealer with bags of feed in his store but no bulk service is at a disadvantage."

Mr. Boutwell has been associated with Ful-O-Pep 4 years, and Ful-O-Pep exclusively the last 2 years. "We're doing fine . . . and Quaker has helped my business grow," he said. "When a problem comes up, Quaker is helpful and understanding and sees your point of view."

GO AND GROW WITH FUL-O-PEP! *Be out front with Ful-O-Pep in bulk and grind-mixing. Write for facts on the feed franchise of the future: Feed Sales Division, The Quaker Oats Company, Merchandise Mart Plaza, Chicago 54, Illinois.*

Trained Ful-O-Pep salesmen, who know modern feeding problems, work closely with McComb Seed & Feed. Here, Hollis Webb (left), Ful-O-Pep District Representative, consults with Mr. and Mrs. G. A. Boutwell on sales and service calls.

Customer service is very important in feed sales today, believes Mr. Boutwell. Hollis Webb of Ful-O-Pep, and Bud Flowers of McComb Seed & Feed, call on Bobby Adams, a customer, to talk over problems of feeding his herd of 70 dairy cows.

Consistently high conversions from feed made with Ful-O-Pep Broiler Concentrates keep customers more than happy, says Mr. Boutwell. Above, Bill Hughes, driver for McComb Seed & Feed, unloads bulk feed directly into broiler house.

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Challenges, Opportunities and Pitfalls Await Feed Men in the Months Ahead

An informed outlook is the best insurance against the "look out!" warnings that usually come too late. That is one of the reasons for the popularity of Feedstuffs' Outlook Issue. That's the reason it has been necessary to reprint the Outlook features in the Dec. 31, 1960, issue.

This 20-page reprint includes 11 articles on business prospects and important trends in various areas of the feed industry, with emphasis on marketing at a profit. Included in the report are exclusive articles by Robert D. Emmons of Wirthmore Feeds, Inc.; Earl P. Mitchell of Alabama Flour Mills; E. C. Fuller of Nutrena Mills, Inc.; G. A. Ensminger of Albers Milling Co., and R. H. Bauman and J. O. Dunbar of the agricultural economics staff at Purdue University.

You'll also find that valuable information from Feedstuffs' survey of feed manufacturers is presented in detail in the report.

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SELLIN' SAM — By Jim Zilverberg

"Wouldn't it be easier to buy from him?"

may consider moving ahead to other considerations.

For example, have you tried working with the bankers in your community to free some of your capital from a heavy load of customer credit? Many bankers would take paper from a feed dealer or manufacturer if they knew more about livestock and poultry production and marketing methods. Some dealers have started bankers on a sound program by giving them their **best** credit risks.

Then, there are two other groups of people who are very important to every feed man. The first is the office staff of the state feed control official. If you are not well acquainted with the man in charge as well as others in the department, it's never too late to get started.

The second group is the state college folks. Many of you are already acquainted with research workers in animal, dairy and poultry husbandry. But how about those who teach the classes and the extension specialists who are constantly talking to your customers. There are other departments in college that are pretty important to you—agricultural marketing and veterinary medicine, just to name a few.

Now, let's conclude with the last step, but by no means the least important step in good public relations.

FIFTH STEP—PRESS RELATIONS—The press and radio can perform two vital functions for you. First they can tell your neighbors and friends about your events more frequently than would otherwise be the case. And secondly, the media can greatly expand the number of people who are acquainted with you or your firm. Both are vital in an effective public relations program.

But to be effective in press and radio relations poses two problems: First, what is news, and second, how do you get it across?

The local newspaper and radio station are looking for "perishable" news — births, marriages, advancements and other personal happenings of your employees.

Probably the biggest and best source of news you have is your company and your customers. Construction of new facilities, modernization of present facilities and many of the customer and community relations projects mentioned before are news items that will undoubtedly carry your name, or your company name, or both.

Your customers are constantly making news if you're looking for it. New feeding operations, better than average feed conversion, good management programs and many other success stories are grist for the local news mills. A really good story is also worth the time of editors from state farm magazines and large out-of-town radio stations.

Above all, you should be on the lookout for good human interest stories, men and women who have overcome great obstacles and risen to new heights—the simple stories of the love of land or immigrants who have found a new and better life in America are excellent seasonal stories for Christmas, New Year, Thanksgiving, spring or fall harvest—these and many others can be yours to transmit to the editor. Many editors are not adverse to mentioning your name as the tipster and it's a great identification in public print. In such cases, a phone call is usually all you need to do.

If your story is about your own company or employees, you might consider a news release. This should be typed double spaced, with plenty of white space on the right and left margins and at the top. It can be sent on your company stationery or plain white paper. Put a date and your name at the top. If you use plain white paper, list your company name and address and the phone number at the top of the page. Don't be concerned with style. Keep it simple and factual. Start off with the five "w's"—who, what, where, when and why—and then you can fill in the essential details of how. Have your facts and the spelling of names straight.

Through all of this, I'm assuming most of your news will be for local consumption and you know the editor of the paper and the radio station farm and news editors. If you ever plan to get news into the state farm magazine or out-of-town radio station, it is essential that you get acquainted with the editor or farm director in question when you are in their town. They are leery of news items from unknown sources.

This talk has skipped over lightly many facets of grass roots public relations. The five steps of employee, customer, community, veterinary and press relations are fundamental. If carried out well, they will contribute materially to your prime reason for being in business—to make a profit. Even more, they will help in your goal of being a better citizen of the community in which you and your family live. My best wishes for your success.

Economist Cites Growth of Cattle Feeding in West

FT. COLLINS, COLO.—The extent to which livestock feeders will survive and profit by sweeping changes now taking place in the livestock industry will depend on how well they adapt feeding operations, marketing programs and their attitudes toward change itself, Dr. R. E. Seltzer, head of agricultural economics at the University of Arizona, said here at the recent annual Colorado State University Feeders Day.

Dr. Seltzer cited trends now apparent in range beef production, size and location of feeding operations and methods by which beef is marketed.

The West has chalked up 79% increase in numbers of cattle on feed in the last 10 years and now accounts for 30% of cattle on feed, compared to 25% 10 years ago, Dr. Seltzer told his audience of livestock feeders.

Although the number of cattle fed in some western states is relatively small compared to major feeding areas, the point is that the increasing interest is there, Dr. Seltzer said. He saw little possibility that the trend will not continue.

Beef Cow Numbers

The Arizona economist also noted that beef cow numbers in the West increased only 19% during the same 10 years, with some states—Arizona, Nevada and New Mexico—even showing a decrease. Greatest increase in beef cow numbers has been in the South.

Because of the West's comparatively small increase in beef cow numbers, the feeding industry will have to look increasingly to other areas for feeder cattle. Those areas which can expand cow-calf production will become more and more important to feeders in the future, Dr. Seltzer said.

Another important trend is the increasing size of feedlot operations and the continuing move toward mechanization, automation and more intensive use. "Feedlot investments are now so high that a feeder cannot afford to let his facilities stand idle," Dr. Seltzer said. "With medium and small size feedlots, it is particularly important that facilities get a high degree of use if they are to compete."

A major marketing change during the last 10 years has been what Dr. Seltzer described as the "decrease in importance of the terminal stock yards and the accompanying increase in the volume of direct sales."

"It would appear that 75% or more of our sales of fed cattle in the West now move either direct to the packer or through local markets," he noted.

He attributed this shift to the development of a large-scale and geographically-concentrated cattle feeding industry.

Touching briefly on beef purchases by retail food chains, Dr. Seltzer said that their growth "has inevitably resulted in their becoming the dominant factor in the meat trade." This must be reckoned with in planning cattle feeding operations now and in the future, he concluded.

Manager Named

DES MOINES—J. Harvey White, warehouse manager here for the Farmers Elevator Service Co., has been appointed branch manager of the Mason City division. He has been employed by Felco since 1948. Glenn Neeley, sales representative for Felco in south central Iowa, succeeds Mr. White as warehouse manager in Des Moines. Morel Steintjes, general manager of Felco in Ft. Dodge, announced the changes.

Reports New Trends In Feed Distribution

BURLINGTON, VT.—A new trend is under way, especially in poultry areas such as Maine, with bulk distribution of feeds from bulk plants and central warehouses, Granville M. Bond, president of Wirthmore Feeds, Inc., told a group of Burlington area business men and educators at a meeting here.

He said this system, said to result in savings for the farmer, is similar to that of the early days when farmers purchased their feeds from small plants along streams operated by water power. Today, the old mills are replaced by bulk plants and central warehouses, he pointed out. The new method of distribution, he said, is progressing more slowly in dairy areas than in poultry areas because there are different characteristics in the two farm businesses.

Mr. Bond recalled changes in the livestock and poultry feed business from the days when farmers bought from the "mixed car" jobber and mixed their own feed. The manufacture of prepared feeds forced the jobber out and the retail feed store came to the forefront, he stated.

Another speaker at the Burlington gathering was Robert F. McLeod, agricultural relations assistant to the president of the Corn Products Co., who said: "The feed business is growing and Vermont dairying is growing. There will be fewer and larger farms earning more income."

Mr. McLeod, who is also chairman of the Wirthmore board of directors, told the local group that Corn Products is a leader in research, supplying 64 products to the farm industry and having operations in 20 foreign countries.

Mr. McLeod and Mr. Bond, together with 17 other persons, were luncheon guests of the Burlington Free Press, one of Vermont's leading newspapers.

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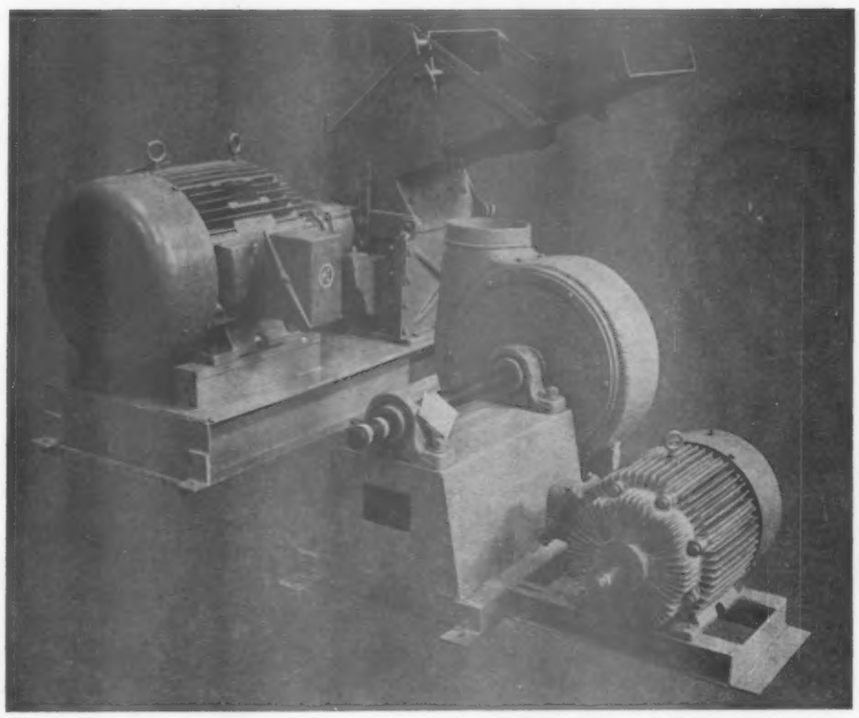

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Research Indicates Milo Can Replace Corn In Poultry Rations, But There Are 'Ifs'

AMARILLO, TEXAS—Milo can be fed in poultry rations as a replacement for yellow corn, but the results won't be similar unless the ration is tailored to accommodate milo's shortcomings.

This approach to the substitution of milo for yellow corn for poultry was assumed by Dr. John W. West, head of Oklahoma State University's poultry science department, when he addressed the second Grain Sorghum Research and Utilization Conference here in the Herring Hotel.

Dr. West summarized, "Milo can replace corn completely as the energy base for poultry rations—if proper attention is given to energy-protein balance, amino acid balance, palatability of milo and the need for additional xanthophyll pigments for yellow skin in broilers." He indicated that successful substitution depends upon balancing the ration to a milo base instead of a corn base.

"Balance Is Key"

"Balance is the key to the utilization of milo in poultry rations," Dr. West said. "Especially important is the balance of amino acids in milo with those of other protein-bearing feedstuffs, and of energy (calories) to the protein and vitamin content of rations fed to poultry during the various phases of the growth, productive and reproductive cycles."

Dr. West noted that milo is primarily a source of energy (calories). "Protein content of milo is important only as a total amino acid profile of poultry rations become affected," he said. "The vitamin content and mineral content are minor considerations, and are of little importance to poultry nutritionists."

Another point which Dr. West stressed is the need for plant breeders to develop grain sorghums with less protein, more starches and much higher fat content.

Dr. West briefly discussed "daily nutrient intake" work done at Oklahoma State by Dr. Rollin H. Thayer and his associates which has produced market-weight turkeys in 5-7 weeks less time on a third less feed (Feedstuffs, March 18, page 1).

Then, noting that the amino acid profile of milo differs markedly from that of the turkey ration standards established at Oklahoma State, Dr. West said, "This means that the greater the percentage of milo in the total feed formula the greater its distorting effect upon the amino acid profile of the total ration. . . ."

"What can we do about this dilemma?", Dr. West continued. "Could we change the amino acid profile of milo appreciably via plant breeding? This would seem to be an unlikely approach. One thing that might be done would be to develop a crop with less total protein. Theoretically, the lower the protein content of the milo, the less would be the distorting effect upon the amino acid profile desired and needed. Hybrid corn varieties are lower in protein than open-pollinated varieties; conceivably, hybridization of milo might produce the same effects.

"Since milo is primarily an energy-bearing feedstuff, and not a protein supplement, effort might be made to increase the energy content, at the expense of protein. Present energy values given for milo vary up to as high as 1,528 Calories of metabolizable energy per pound. For poultry rations, the ideal would be about 2,000 Calories per pound. This could be done by increasing the starch and/or fat content of milo, especially the fat.

"Thus, a proper direction would seem to be toward a grain sorghum with less protein and more calories. Is this feasible?

"Increasing the fat content of milo from its present 3% to 12% and on to 24% would increase the caloric content from 1,528 to 1,704 to 1,905 Calories of metabolizable energy per pound. We can only guess as to where the protein and N.F.E. content might go. I would suspect that the fiber content would probably remain rather constant.

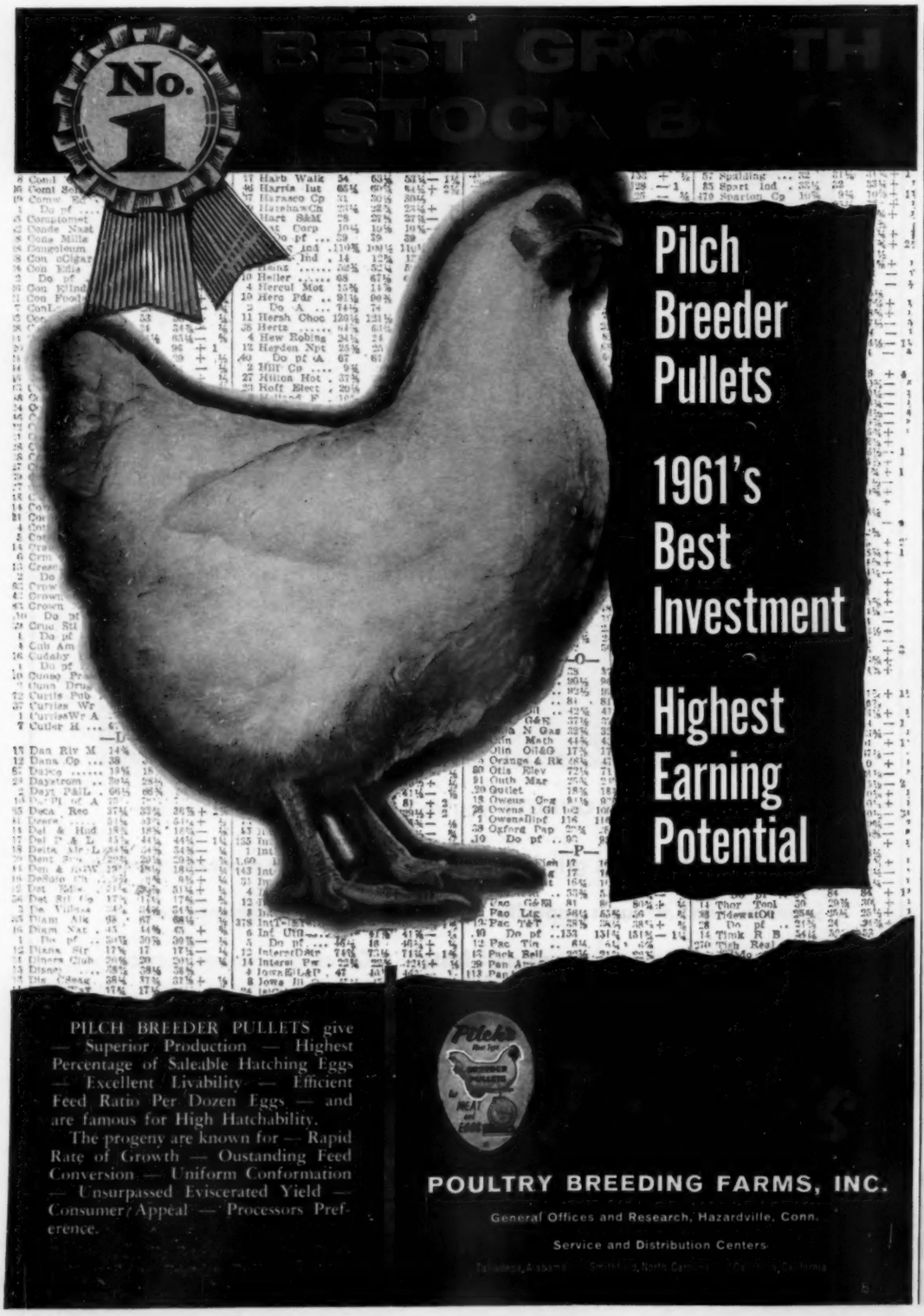
"If the fat content of milo could be increased from 3% to 12%, how much additional potential use might we have? Looking at various types of poultry rations, the present potential use would vary from about 30% to 60% of the ration. Increasing the fat content of milo from 3% to 12% would elevate this range to a level varying from 35% to 75% of the total poultry feed formula."

Poultry Day, Exhibit Planned at Connecticut

STORRS, CONN.—A committee of university and industry people has been working to develop a poultry day program and exhibit for June 19 at the University of Connecticut here.

Poultry day will begin with exhibits in the Ratcliffe Hicks Arena at 1:30 p.m. Exhibits will be open until 9 p.m. Along with the exhibits there will be three clinics operating continuously for answering questions on poultry house ventilation, egg collection and egg processing, and dead bird disposal problems. The exhibits will have a three-fold objective corresponding to the clinics in that there will be exhibits on ventilating systems, egg collection and processing equipment, and dead bird disposal systems.

The highlight of the afternoon will be a panel discussion on evaluation of equipment, primarily egg collection and processing equipment. At 6 p.m. the Connecticut Poultry Assn. will serve a barbecue. At 7:30 p.m. in the College of Agriculture auditorium an evening program will begin with prominent national figures discussing terminal market pricing, futures in marketing and national policy.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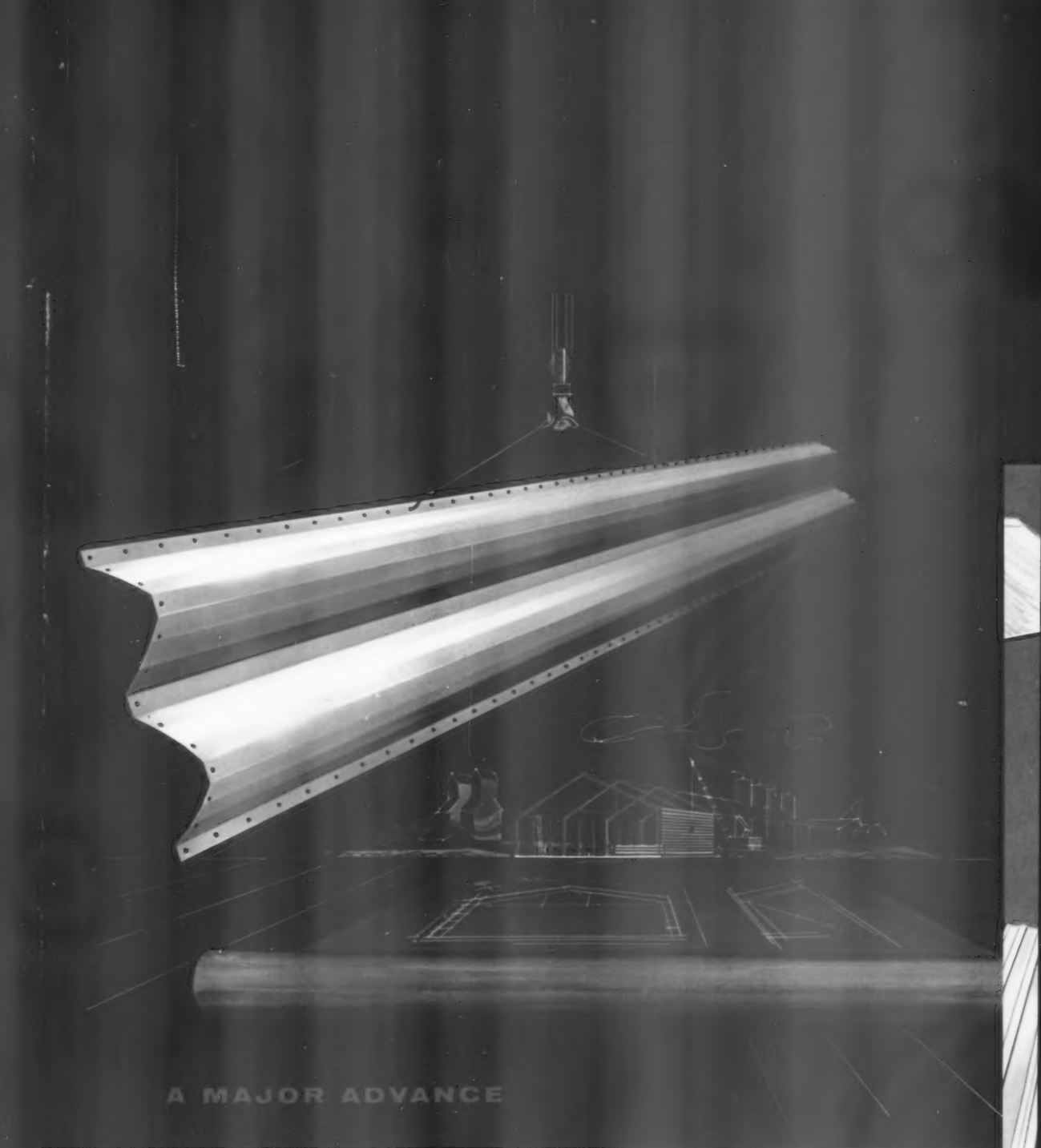

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A new horizontally corrugated wall panel—designed specifically for grain storage—makes this possible. It's completely self-cleaning. This new panel has a 43° slope corrugation. Grain can't get hung-up on it. And, the panel is so strong that it can be attached directly to the rigid frames. Sidewall girts are eliminated. There's nothing to trap or hold grain. Even building corners are rounded to assure self-cleaning.

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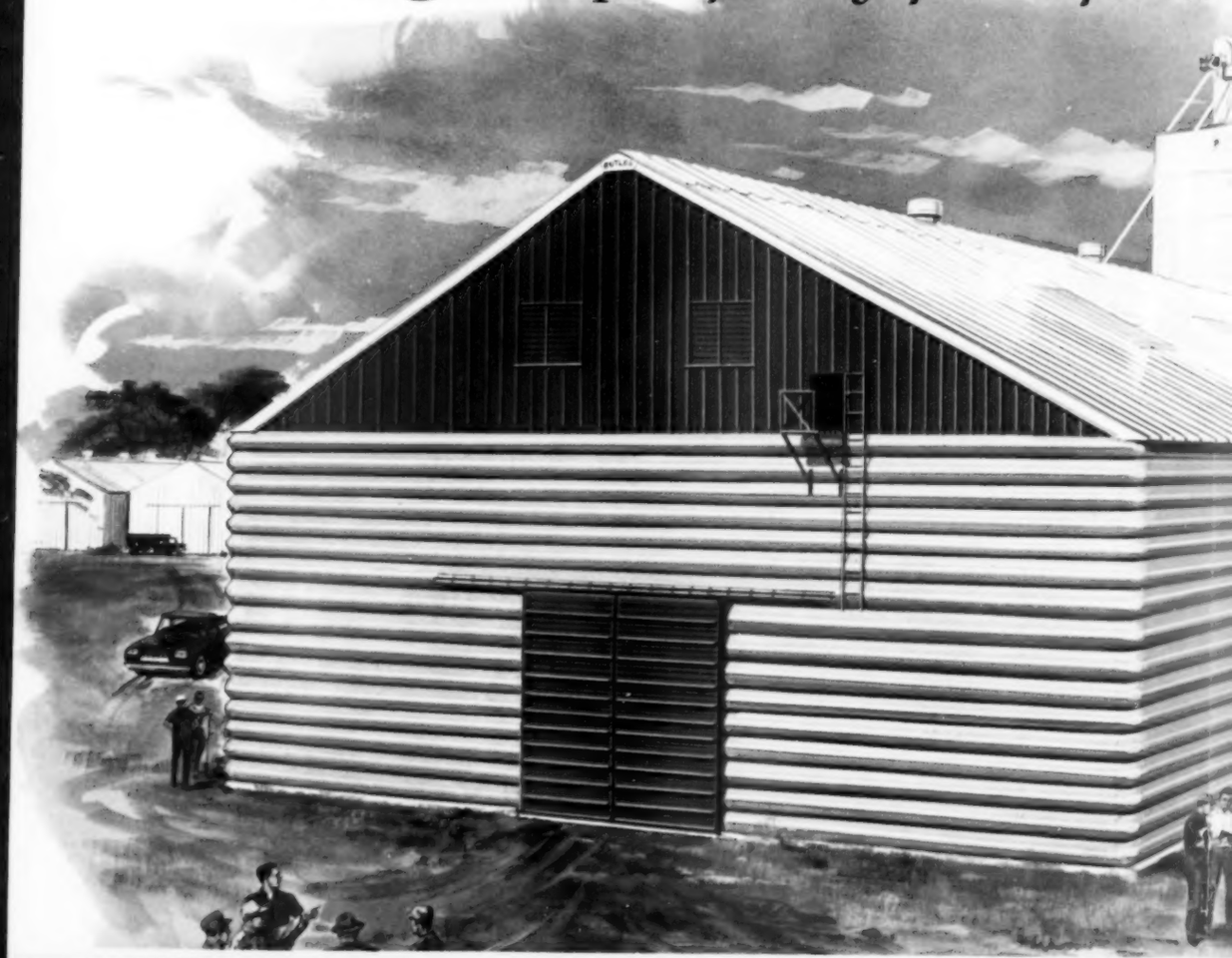

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These new panels have two unique features: size and shape. Each panel covers 60 square feet (3' x 20'). This means far fewer laps in your building, fewer spots where trouble could occur. And every vertical joint is covered with a batten strip and weather protected by a special sealing compound. Grain can't leak out, weather can't get in. The deep corrugations make each panel so strong that no girts are required. The danger of breakout is eliminated, there is no place for grain to get trapped. Grain can't hang up on the 43° slope. Self-cleaning is assured, cleanout is complete.

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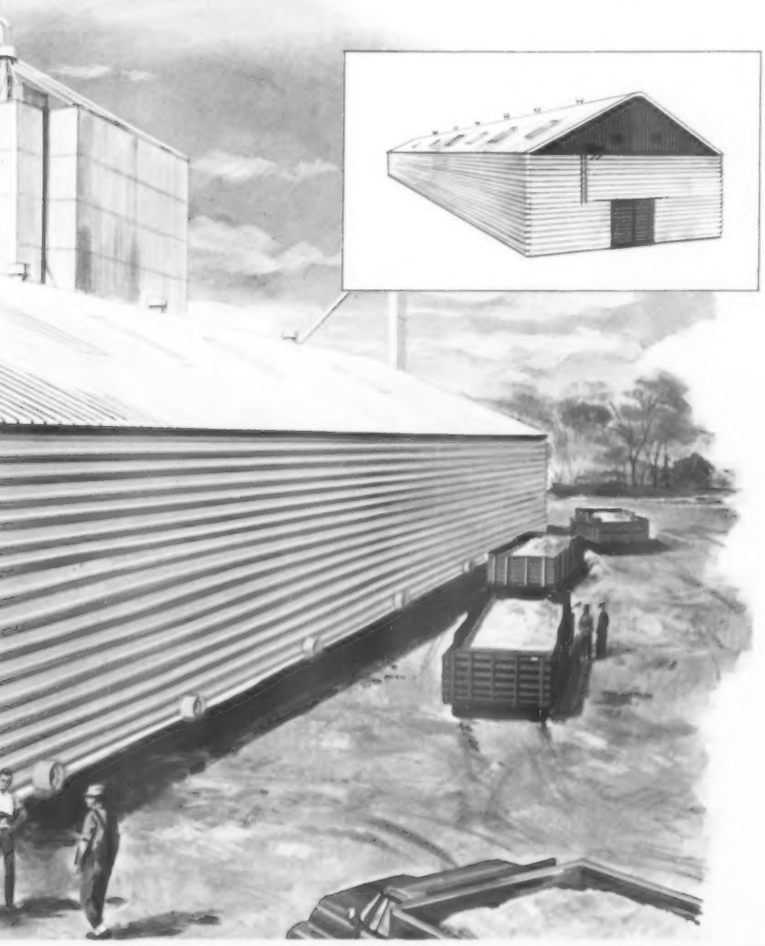

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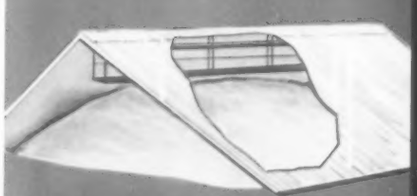

This new, steep 6-in-12 pitch roof, permits maximum filling of building, yet provides extra room for overhead augers and walkways... makes inspection easy. And Butler's rugged structural frame is designed to take the extra load of the walkway and a fully loaded auger, without special bracing.

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Specially formed gable trim panels seal out wind, weather and pests. Factory-applied Butler-Tone™ finish gives your Butler grain storage building new eye-appeal.

Grain can't get caught in the corners of this building – they're rounded. This new, deep drawn, wrap-around corner assures self-cleaning. Grain can't leak out.

For safest flat storage at lowest cost-per-bushel stored... *see your Butler Builder*

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Arkansas Economists See Need to Adjust To Egg Integration

LITTLE ROCK, ARK.—The need for adjustment to large-scale, totally integrated production, processing and distribution of uniformly high quality eggs has been noted by two University of Arkansas agricultural economists. New technologies requiring large volumes of eggs can be used to reduce costs, they said, and these new concepts underscore the need for efficient management and large capital expenditures.

Dr. Hilliard Jackson and Prof. W. J. Windham, the University of Arkansas economists, commented in the Arkansas Poultry News, "To accomplish this change will require faster than usual action on the part of established integrators and some new integrated firms in Arkansas. The addition of 12 integrated units of 150,000 layers each would double output. Sufficient educational, research and technical resources should be focused on this problem while the opportunity to expand still exists."

Surplus Producer

Dr. Jackson and Prof. Windham noted that Arkansas has become a surplus producer of grade A eggs, largely through contract production on a factory-type scale. About 10,000 cases of eggs are shipped out of the state each week.

In 1950, an Arkansas survey of 362 market egg flocks showed that only one of these flocks was comprised of as many as 2,000 layers. A recent survey showed that most market eggs are produced by flocks of 2,000 or more layers each.

Two Classes of Flocks

These large flocks, Dr. Jackson and Prof. Windham noted, may be divided into two classes: Commercial egg farms and integrated contract operations.

The integrated operations were described this way: "Feed dealers or hatcherymen (integrators) who produce eggs under contract with individual farmers or through use of hired labor on their own or leased farms.

"There are about 40 integrators in the state, managing 10,000 to over 200,000 birds each. A common size is 10-50,000 layers (see accompanying table)."

Commercial egg farms: "Individuals who own their birds, produce and process eggs at the home farm (with or without hired labor) and market eggs directly to retail stores and institutions in cases or cartons.

"The usual grower sells 28-30 cases each week and has 2,500 layers. The largest flock has 50,000 layers. Several have 10-25,000 layers. It is estimated that about 300 such flocks of 2,000 layers or more each are in operation."

Dr. Jackson and Prof. Windham also reported, "Some smaller integrators have banded together for marketing and transporting eggs. Most sales are made in cases with the eggs being flash candled to remove blood and meat spots and checks. Over 50% of eggs produced are shipped to distributors in out-of-state cities."

Further expansion of egg production in Arkansas, according to the researchers, depends upon whether producers can deliver eggs to local and distant cities at prices competitive with other production areas.

"Analysis of the national egg market brings to light no logical reason why Arkansas could not become a ranking egg producing state," said the authors of the article which appeared in Arkansas Poultry News. "The seeming disadvantage of being far from large cities of the nation may not be decisive, considering developing technologies in transportation and maintenance of egg quality.

"An important advantage is the complementary nature of egg and broiler production relative to use of hatcheries, feed mills, transportation equipment and capital accumulation. Other favorable factors are a suitable climate and an abundant supply of labor."

Analysis of Integrated Flocks

Number of layers per integrator*	Number of integrators	Total flocks
10,000- 49,999	25	85
50,000- 99,999	10	110
100,000-199,999	4	130
200,000 and up	1	65
	40	390

*Includes layers on owned or leased farms of integrators and production from a small number of independent producers.

Latest Rulings in Labor Relations

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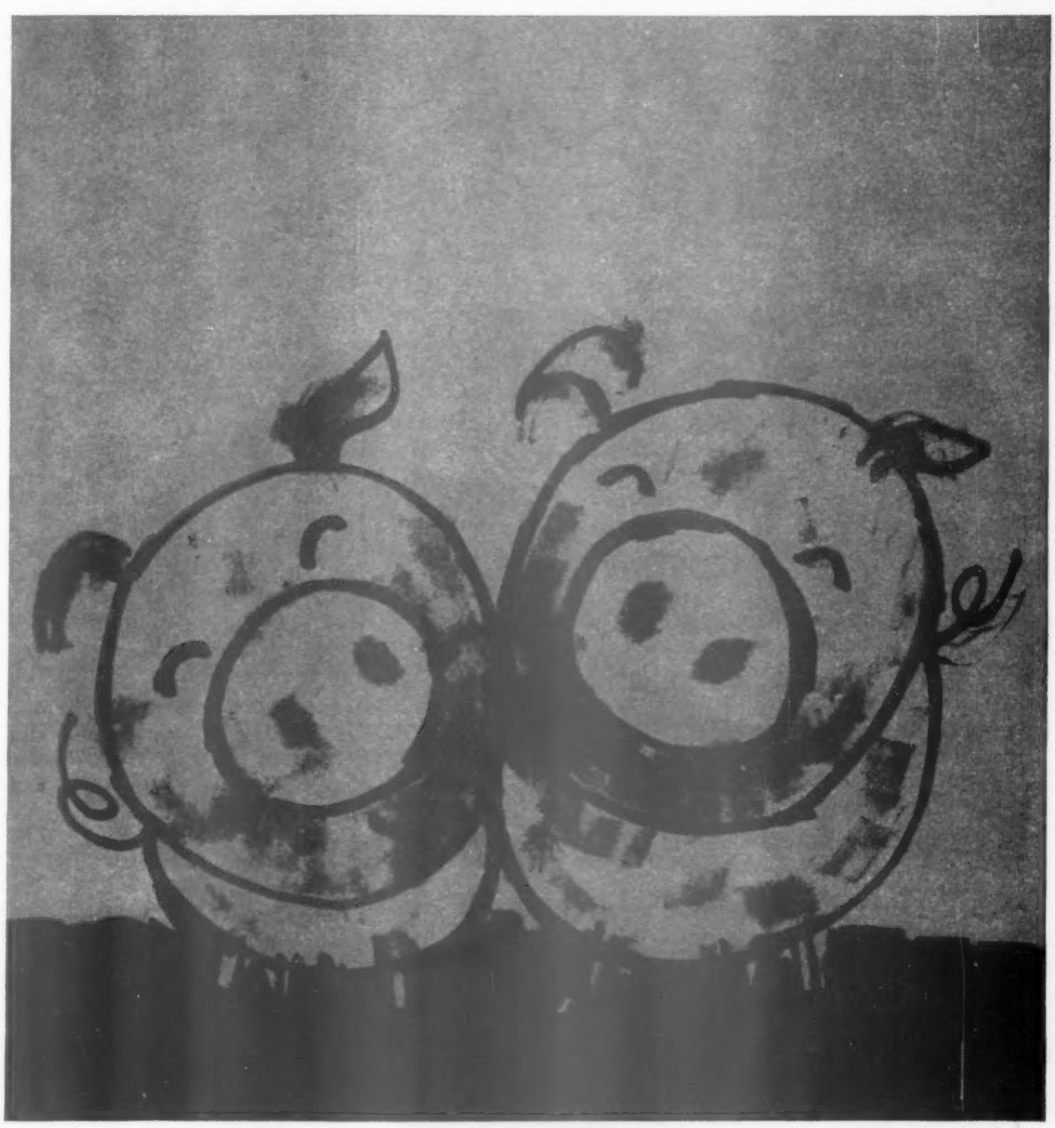
ON SATURDAY IN THIS WEATHER ?
WE CAN'T OPERATE, SO NO PAY FOR REPORTING !
PHOOIE ON YOU !
I SHOWED UP AS ASKED !
TOO FEW MEN ARRIVED !
ARBITRATOR'S DECISION
YES, WHEN EMPLOYEE RESPONDS TO INSTRUCTIONS THAT PLANT WILL OPERATE
Based on a 1961 Georgia decision



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HOOKER CHEMICALS PLASTICS

Surveyed 'Fresh Fancy' Producers Believe Future's Egg Will Meet Strict Standards

By Special Correspondent

MACON, GA.—The egg of tomorrow may not necessarily be marked "USDA Fresh Fancy," but it will more than likely meet the requirements of the new grading program which has been used by some 20 producers throughout the country for the past 18 months.

This is the consensus of the producers themselves who have been operating under the rigid regulations of the newest U.S. Department of Agriculture egg program, described as "highly successful" last September by USDA officials after the first full year of production.

In a study of the program from the producer's viewpoint, made by Atlantic Agricultural Services, Macon, a southeastern research organization, those participating agreed the new grade is winning consumer acceptance, hasn't materially increased production costs and presents no serious problems which might discourage other commercial producers from qualifying for the "Fresh Fancy" grade for their eggs.

Strict Requirements

The strict rules—all birds must be within 60 days of the same age, each individual flock's production must be collected and packed separately and regular periodic inspection must be conducted to determine the Haugh score—are listed as "somewhat of a handicap at the outset but quickly fall into routine chores as the program progresses."

Once the routine is established, the producers report that "normal, sound management practices" simplify maintenance of the flock. In instances where eggs are produced under contract, "policing" at the outset is listed as an additional chore, but once the flock is in production with eggs which qualify for the standard based on Haugh units, maintenance of quality is considered no problem.

Large and Medium Eggs

In general, the producers report that approximately 95% of all eggs laid by these flocks meet the requirements for both "large" and "medium." No mention was made of "small" eggs because the flocks are not started on the program until sexually mature.

"It doesn't take any more effort to produce a good egg than it does to let slipshod methods result in low quality," one producer said.

Another producer said the "Fresh Fancy" egg is nothing really new—he has been packing and marketing Grade AA eggs for several years, and since going on this program, has "simply changed the wording on his cartons."

It was pointed out that many commercial producers are more than likely producing eggs now that could qualify for the Fresh Fancy grade, and aside from setting up the inspection phase to determine the Haugh units, there should be little difficulty for these producers to meet the other requirements of the program.

Production Costs Vary

Additional or increased production costs were discussed freely by the producers. It is generally agreed that the more frequent gathering of eggs, the rigid cooling and washing requirements, packing each flock's production separately and the regular USDA inspection to determine the Haugh score, add to the total cost of production, estimated from a low of 1¢ to a high of 4¢ per dozen.

But none of the producers consider the slight increase in costs, most of which is labor, a serious problem, because higher quality eggs, higher rate-of-lay and lower feed costs per dozen, plus the diminishing potential of disease factors, due to more rigid management practices, more than offset the labor cost increase. Most indicated the increased labor cost has been gradually absorbed through better efficiency, which accounts to a great degree for the reported variation in increased costs.

Birds of Similar Age

Having all the birds the same age —within 60 days—is rated more of an asset than a liability by the producers, since most of them follow the practice of "all in, all out." Some cull toward the end of the laying period—which ranges from 12 to 14 months and others use the Haugh count as the deciding factor in replacing the flock.

The size of the flocks varies with each producer, from a low of 1,250 birds to a high of 10,000; however, in the larger flocks, birds are penned or housed in smaller units, again depending on the facilities and practices of the individual.

Virtually all strains of popular hens are used, with the White Leghorn blood lines having some slight preference. Hybrids are used in somewhat increasing numbers, but the producers were quick to emphasize that no particular breed or strain shows any greater natural ability to lay eggs which can qualify.

From this, it is evident that most of the eggs produced under the Fresh Fancy program are white shell, which may be an item of consumer preference since almost all of the producers are marketing the eggs locally—at least not shipping them into distant wholesale channels.

As to feeding practices, none of the producers report the use of "special" rations to step up the quality of the eggs. But some have local feed mills grind and mix rations to their individual specifications, some operate their own feed mills on the farm and some use local custom mixing mobile service.

Each of the producers is reluctant to spell out the formula used, as might be expected. A few build the ration "from the ground up" with the aid of the feed dealer.

Consumer Acceptance

Looking at the program from a critical viewpoint, the producers were of the opinion the chief problem is consumer acceptance at premium prices. However, there are indications that acceptance is gradually disappearing due to stepped up promotion and advertising.

There are indications that supermarkets are reluctant to feature "premium quality eggs" at a higher price in newspaper and circular advertising. In those stores where Fresh Fancy eggs are not sold at a premium, promotion has usually been "point of purchase" type.

One producer declared that the increased volume of sales at "non-premium prices," both in stores and on consumer routes (served by local dairies), more than compensates for additional revenue or income which might result from a premium price. And he added that the "higher quality egg, when recognized by the housewife, is a positive competitive advantage."

Price Establishment

Commercial egg producers probably will be interested in one important phase of the program: How the wholesale price is established for the food stores and the retail price when sold direct to the consumer (on routes). Even though some of the producers are in the Midwest or what might be termed within the "zone of influence" of the Chicago egg markets, the New York market report (not a "commercial quotation") is used by most of these producers to set the base price. In one instance, the "local" market is used as the base.

Since many wholesalers in other egg producing areas use the New York reports on the more common specifications as to weight, size and quality as a base price, it has been observed that if any premium is to be paid by a supermarket for a Fresh Fancy egg, it would be logical to follow the pattern of other grade prices influenced by New York markets.

Another item of concern to producers who are marketing cartoned eggs is the attitude of the Fresh Fancy packers to cellophane or plastic wrapping. One Fresh Fancy producer is using the wrap and others indicated a keen interest in this new development.

This was brought about by the discussion of the requirement that Fresh Fancy eggs "be pulled" from stores if not sold within 10 days of grading and packing.

The surveyed producers believe the Fresh Fancy program is well beyond the experimental stage, particularly as far as consumer acceptance and preference are concerned.

And as consumer preference has increased, the producers point to that acceptance as a positive answer to the comment that it may be only a matter of time until Consumer Grade B and Grade C eggs disappear from the large food stores.

The research report concludes that the competitive advantage gained by consumer preference for the Fresh Fancy quality egg or for eggs of equally high and consistent grade, may be a decisive factor in more producers marketing eggs which can qualify as Fresh Fancy.

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CYANAMID

JOE BROOKS

BY AL P. NELSON

A Favorable Image

The frogs were croaking lonesomely in the marsh near Joe Brooks' Feed Mill as the dealer and his employees walked from the Hotel Manitou to the mill for their monthly sales training meeting. It was Joe's idea to treat his men to a steak dinner before the sales training meeting and furnish them with a quality cigar. He worked on the idea that an employee can function better on a steak dinner after a hard day's work than he can on a light sandwich, especially at a sales training meeting.

"Well, Joe," called out Milt Peters, the uninhibited one, as he walked behind Joe smoking his cigar. "What's on tonight for sales training? We've covered everything, haven't we? Nothin' more to learn!"

"You can learn to come to work mornings on time after a hard night," snapped Pop Henley, who was always critical of Milt and his intense interest in redheads.

Everyone laughed. "Don't pick on me so much, Pop," Milt complained. "You'll give me a persecution complex."

"That isn't possible," came back Pop. "You have no conscience, and a man without a conscience can't be insulted."

Continuous Learning

"You asked what we're going to talk about tonight," Joe Brooks spoke up. "Yes, there is something more to learn. The minute we stop learning in this rapidly changing feed business, we are lost profitwise."

"Life was easier 60 years ago," moaned Milt. "At least all the old timers say it was."

When the employees—11 of them from the Hansen's Creek Mill and the Endeavor branch—were seated, Joe took a sheet of paper from his pocket and unfolded it. He brushed his hand over his brownish hair, then cleared his throat.

"Men," he said, "when you think of the Lord automobile, what thought or image comes into your mind?"

"Well," said Butterball Barlow, "I think of one of the most famous automobiles in America. It's one that is very low priced, and which runs economically and one which the makers always stand behind with a guarantee."

Joe nodded. "And what comes into your mind when you think of a Dadillac automobile?"

"That's easy," Milt grinned. "I think of a big, sleek, luxury car that has class, one that will outlast many other cars because it's exceptionally well built. And with me at the wheel of a Dadillac, wow, there's not a redhead in the county who wouldn't step in happily beside me in the front seat after I honk at her. The Dadillac and me are that kind."

"Open the window!" Pop yelled suddenly. "I can't stand all this wind."

Joe held up his hand. "Men," he said, "what Butterball and Milt have said about the automobiles is what almost everyone says about those products. What I'm trying to say is that every company has an image, something it stands for because of its product and policy. Every company, big or little, needs an image, a strong image, that will help bring more sales dollars into the till."

Public Image

The employees were silent, thinking about Joe's words.

"Now I ask you," Joe went on, "what is the image the public has of this feed mill, and all of us who work here?"

"Well," burst forth Pop, "if a customer comes in here and sees Milt sleeping on a sack of feed after a hard night out, that's an image we can't be proud of."

Milt grinned. "Pop," he said, "get wise to yourself. You can't insult me."

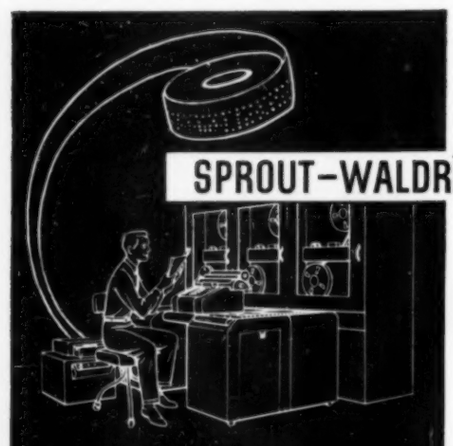
"Yes, that's one image," Joe cautioned, "and we have to be careful that doesn't grow, or that too many customers become aware of it."

"I think," put in Ed Ricker from the Endeavor mill, "that the image many farmers have of us is that we are a mill which produces good feeds and delivers promptly."

"And that we pellet feeds," put in Windy Kramer.

"I think the public feels that our organization is one which is willing to help it and serve it," said Gil Acker.

Dark-haired Bill Reitci agreed. "We're honest," he said. "We don't



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"Could you come back tomorrow, Ed . . . I'm busy today."

gyp anybody. One farmer told me he trusts us."

Joe nodded. "Yes, that's worth a lot."

Ed Mallon from Endeavor crossed one leg over another. "I think most customers know we are feed experts. They know we hold meetings to discuss the latest nutritional information on feeds. One customer told me he can tell from talking to us we're up on feeding."

Pop Henley chewed on his cut plug. "Our prices are reasonable," he said. "A farmer always thinks of his pocketbook. He knows we give him a lot for his money."

And so the discussion went. Finally Joe said, "Well, I can see that you fellows certainly know a lot about this business. You've summed it up pretty well. And I can see that all of you are aware our company has a special image for a customer when he hears our name or when he thinks of us. This should be a lesson to us to try always to keep that image a favorable one."

"That's right," Milt said. "I know some stores I wouldn't buy in if the nearest competitor was 10 miles away. Either the clerks are snippy, or unfriendly, or I don't trust the owner, or I got a bad deal there once, or that I just don't have faith in what the clerk or owner tells me when describing goods."

Many Points of Policy

Other heads nodded in unison.

"You analyzed it very well, Milt," said Joe. "There are many, many points of policy we have to observe every day to satisfy customers. We must always keep in mind that we must sell the customer the very best feed we know how to make. We have to give him the best feed nutrition knowledge we possess, and we must also be friendly, sell him at reasonable prices, and still make a profit for ourselves."

"That's a big image, Joe," said stocky Ed Eggers, manager of the Endeavor branch. "In the case of an automobile, the image centers around one or two points, but in the feed business, as we've discussed it, there are many, many points to an image."

Joe nodded. "When the farmer thinks of feed and the dealer from whom he buys, he takes many points into consideration—all of which are highly important. In the case of the automobiles, two points or three may stand out above all others and thus create the image."

Windy Kramer nodded. "Joe, this discussion has done me a lot of good. Now when I travel the routes every day calling on customers and prospects, I'm going to imagine I am Mr. Joe Brooks Feed Mill, the place the customer wants to buy his feeds. I'm going to do all I can to help the customer keep that excellent image in his mind, so I will make more sales and please our customers."

"That's the idea," Joe smiled. "If all of us do that, our total sales will increase, and there will be more profit for all of us on our pay incentive program."

"Good," smiled Milt, "and now if the meeting is over, I have a neat little image on my mind that I would like to phone."

AUSTRALIAN VISITORS—Four Australian visitors and their Illinois flying farmer hosts were recent guests of Honeggers' & Co., Inc., at Fairbury, Ill. The Australians, representing the Australian Primary Procedures Union, the second largest farm organization in Australia, were part of a group of 10 farmers spending five weeks touring the U.S. under the auspices of the National Flying Farmer Organization. From left are Ernest Thorpe, Clinton; Joe Kuenzi and Stanley Weeks, Fairbury; Donald Lawrie and Tom McMahon, Australia; Frank Thorpe, Clinton; Kevin Vaughn and Frank Kramme, Australia; Albert Michael, Odell; Carl Thorp, Clinton; Roscoe Knott, Urbana; Curtis Weeks, Fairbury, and Frank Honegger, Forrest.

Hygromycin B Tests On Layers Favorable

COLLEGE STATION, TEXAS — Texas Agricultural Experiment Station workers report promising results from tests conducted in the use of Hygromycin B in growing and laying rations to control internal parasites and promote egg production.

A fourth experiment is under way with the anthelmintic, according to Dr. J. H. Quisenberry. He said that previous use of piperazine derivatives as an anthelmintic for poultry had proven favorable but that it was found to be unfeasible economically to administer piperazine continuously.

The first Texas test was with groups fed a basal diet and 6 and 12 grams of Hygromycin B added per ton of feed. Dr. Quisenberry said that results of this experiment showed that the continuous feeding of Hygromycin B in a practical type diet resulted in a higher rate of production and improvement in feed efficiency. He added that for optimum results, Hygromycin B should be included in both the growing and laying rations.

He commented that 12 gm. might be in excess of requirements and that effects of high levels on palatability remain to be determined.

He said that the anthelmintic property of Hygromycin B may be more effective against cecalworms than against roundworms. The researcher stated, "The data indicate that the continuous feeding of Hygromycin B during the growing period is effective in reducing the number of parasitized birds under conditions of relatively severe exposure."

A second experiment was conducted with promise shown and two more experiments are under way, the researcher said. He commented, "To date the results look promising."

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Will Better Amino Acid Balance Improve Efficiency of Egg Production?

By Dr. M. L. Scott
Cornell University
Ithaca, N.Y.

Dr. M. L. Scott

The laying hen puts about 2.6-6.7 gm. of protein into each egg. In addition to this, she requires about 3.0-3.3 gm. of protein per day for maintenance of her body protein tissues. A summary of recent research on the protein requirements of laying hens shows, however (Table 1), that the laying hen must consume about 18 gm. of protein per day in order to achieve good egg production. The question arises, therefore, as to why the hen must consume this amount of protein when she makes use of only about 10 gm. of protein.

The first possibility, of course, is that the feed protein consumed by hens is highly indigestible and that the hen digests and absorbs only 55% of the protein in the feed. Tests on protein digestibility, however, show that hens actually digest and absorb about 85% of the protein in modern-day laying diets.

In view of this, therefore, the answer must lie in a lack of efficient utilization of the dietary protein for egg production. When protein is inefficiently utilized, the nutritionist immediately looks to see if the inefficiency is due to an imbalance of the amino acids required. The results presented in Table 2 show the relative distribution of the essential amino acids in egg protein as compared to the distribution of these amino acids in feed protein. It is readily apparent, upon examining the ratio of amino acids in the egg as compared to the feed protein, that the hen must consume about 12.2 gm. of feed protein in order to get sufficient methionine to put into an egg containing 6.1 gm. of egg protein. In view of this, the utilization of the 18 gm. daily intake of protein consumed by one hen in an unbalanced diet can be represented as shown in Table 3.

By addition of methionine to the laying ration, it should be possible to reduce the amount of protein that must be consumed by the hen in order to make an egg. If one should add the amount of methionine required to reduce the amount of needed feed protein to 9.7 gm., then the total protein intake needed by the hen should be only about 15 gm. per day as shown in Table 4. Under these conditions, one would expect that the hens would no longer need to over-eat so much in order to obtain the amino acids required for the formation of an egg and, therefore, could produce eggs with a better efficiency of feed utilization. Undoubtedly, however, the minimum

TABLE 1. Evidence for a Constant Protein Requirement in Grams of Protein per Hen per Day for Optimum Egg Production

Reference	Protein in diet %	Production %	Feed per doz. eggs lb.	Feed per 100 hens per day lb.	Protein requirement Per hen lb.	Protein requirement Per day gm.
Data from Hens Showing Optimum Production and Efficiency						
1	17.8	77.4	3.3	21.6	0.039	17.8
2	17.0	80.8	3.6	24.3	0.041	18.6
3	16.8	75.4	3.8	24.0	0.040	18.2
1	15.3	71.7	4.3	25.7	0.039	17.8
2	15.0	74.4	4.1	25.4	0.038	17.3
1	14.3	79.0	4.1	27.0	0.039	17.8
4	13.0	76.0	4.0	20.9	0.040	18.2
Data from Hens Showing Less Than Optimum Production and Efficiency						
5	14.0	62.0	5.0	25.9	0.036	16.5
2	13.0	64.6	4.7	25.3	0.033	14.9
6	10.4	56.5	6.4	30.2	0.031	14.2

TABLE 2. Comparison of Amino Acid Composition of Feed (Corn-Soy) Protein and Egg Protein

Amino acid	—Amino acid composition— * Feed protein % of protein	Egg protein % of protein	Ratio Egg protein/feed protein
Arginine	6.7	6.4	0.96
Lysine	4.9	7.2	1.47
Methionine	1.7	3.4	2.00
Cystine	1.8	2.4	1.33
Tryptophan	1.2	1.5	1.25
Histidine	2.4	2.1	0.88
Leucine	9.6	9.2	0.96
Isoleucine	5.1	8.0	1.57
Phenylalanine	5.2	6.3	1.21
Threonine	4.1	4.9	1.19
Valine	5.1	7.3	1.43

TABLE 3. Utilization of Daily Protein Consumed by One Laying Hen (Unbalanced Diet)

Daily protein intake		18.0 gm.
Daily loss in digestion (15%x18 gm.)	2.7 gm.	
Daily output of one egg (2x6.1)	12.2 gm.	
Daily deposition of body proteins (replacing 0.5 gm. endogenous nitrogen/day x 6.25)	3.1 gm.	
Total	18.0 gm.	
Total daily intake		18.0 gm.
Total daily usage		18.0 gm.

TABLE 4. Utilization of Daily Protein Consumed by One Laying Hen (Methionine Added)

Daily protein intake		15.0 gm.
Daily loss in digestion (15%x15 gm.)	2.2 gm.	
Daily output of one egg (1.6x6.1)	9.7 gm.	
Daily deposition of body proteins (replacing 0.5 gm. endogenous nitrogen/day (0.5x6.25)	3.1 gm.	
Total	15.0 gm.	
Total daily intake		15.0 gm.
Total daily usage		15.0 gm.

TABLE 5. Expected Feed Required by Hens Fed Unbalanced Diets vs. Diets With Added Methionine

Protein in diet %	Production %	Feed/100 hens/day lb.	Protein/hen per day gm.
Unbalanced Diets			
16.8	72.0	24.0	18.0
14.8	72.0	27.0	18.0
Methionine Added			
16.8	72.0	19.5	15.0
14.8	72.0	22.5	15.0

TABLE 6. Effect of Methionine Hydroxy Analogue Upon Efficiency of Egg Production (Cumulative Results for First Five Months of Full Production)

Treatment	% Production	Feed per doz. eggs lb.
Basal No. 1 (16% protein)	64.2	3.95
	65.8	4.31
Average	65.0	4.13
Basal No. 1 + 0.125% methionine hydroxy analogue*	70.9	3.66
	69.7	3.65
Average	70.3	3.65
Basal No. 2 (18% protein)	67.6	3.80
	68.3	3.77
Average	68.0	3.79
Basal No. 2 + 0.1% methionine hydroxy analogue*	69.3	3.42
	69.6	3.63
Average	69.5	3.53

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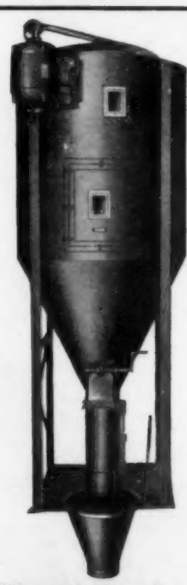

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WRITE FOR BULLETIN No. 625 giving dimensions, specifications and performance data on the Eureka Vertical Batch Mixer.

protein requirement can be achieved only when the diet provides sufficient energy from carbohydrate and fat such that the hen can make most efficient use of the protein present in the diet and would not need to waste any of the protein as a source of energy. Under these conditions, one might expect that the addition of methionine at a level of about 1.5-2.25 lb. per ton of feed might produce the results presented in Table 5, if one uses a modern, high producing small White Leghorn strain and a modern high energy laying ration, under moderate environmental conditions.

Experimental Results—One experiment to test the hypothesis presented above has been conducted with caged layers at the Babcock Poultry Farm, Ithaca, N.Y., in a collaborative experiment between the Babcock Poultry Farm and the E. I. du Pont de Nemours & Co. Duplicate lots of Babcock layers were fed modern laying rations containing 16% protein and 3% added fat or 18% protein and 5% added fat, with and without the addition of the methionine hydroxy analogue.* The experimental plan and results of the experiment are presented in Table 6. These results show that under the conditions of this experiment the addition of methionine hydroxy analogue, at the levels used, produced a marked improvement in efficiency of feed utilization, especially with the diet containing 16% protein. Egg production also was improved by the addition of methionine hydroxy analogue to the low protein diet. Efficiency of feed utilization was improved somewhat, even upon addition of the methionine analogue to the high-protein diet. These results, therefore, support the hypothesis presented above.

A better balance of amino acids may produce other benefits—In addition to improvements in efficiency of feed utilization, a better balance of amino acids should (1) produce better feathering, (2) help prevent wet litter, and (3) make for better efficiency of energy utilization by the hens.

Feathering—Since feathers are extremely high in sulfur amino acid (cystine) content, the formation of feathers undoubtedly produces a drain on the dietary methionine available for other functions, such as maintenance of muscle tissue and production of eggs. Balancing the diet in terms of methionine, therefore, should help laying hens to maintain better feathering.

Prevention of wet litter—When laying hens are fed diets imbalanced in terms of the amino acids required for formation of an egg such that they may consume approximately 12 gm. of feed protein in order to get the methionine needed to make 6 gm. of egg protein, it is obvious that a large proportion of the excess protein thus consumed must be deaminated and excreted as uric acid by the hen. Uric acid, being a relatively insoluble compound, causes the hens to increase water consumption in order to flush the excess uric acid through the kidney tubules. Therefore, the better balance of dietary amino acids achieved by the addition of methionine to the feed should reduce the amount of uric acid being excreted and thereby help to prevent wet litter.

Efficiency of energy utilization—Dietary energy can be used in three different ways: (a) for growth and egg production, (b) for work and activity and (c) wasted as excess heat. Studies on energy utilization have shown that the amount of energy wasted as heat is increased when deficient protein levels are fed or when there is an imbalance of amino acids in the diet. In view of this, the better balance of amino acids achieved by addition of methionine to the diet of the laying hen should improve efficiency of energy utilization.

Practical application—The hypothesis presented above is based upon the fact that essential amino acids are absolutely necessary on a daily basis, and upon the premise that the daily intake of essential amino acids must equal the daily usage. Since the daily feed intake of any given strain or breed of hens cannot be accurately predicted and depends not only upon the amino acid balance but also upon the energy content, palatability, environmental temperature and other conditions, it is impossible at this point to say exactly how much improvement may be achieved by supplementing any given laying ration for any particular strain of layers with methionine alone and/or with methionine plus other essential amino acids. The single experiment presented in this report indicates that the use of methionine (or its hydroxy analogue) in present-day layer rations is of economic value. It is hoped that this report will stimulate research aimed at working out more exactly the proper relationships between the various essential amino acids and the energy content of the diet for optimum efficiency of egg production.

*Hydan feed supplement.

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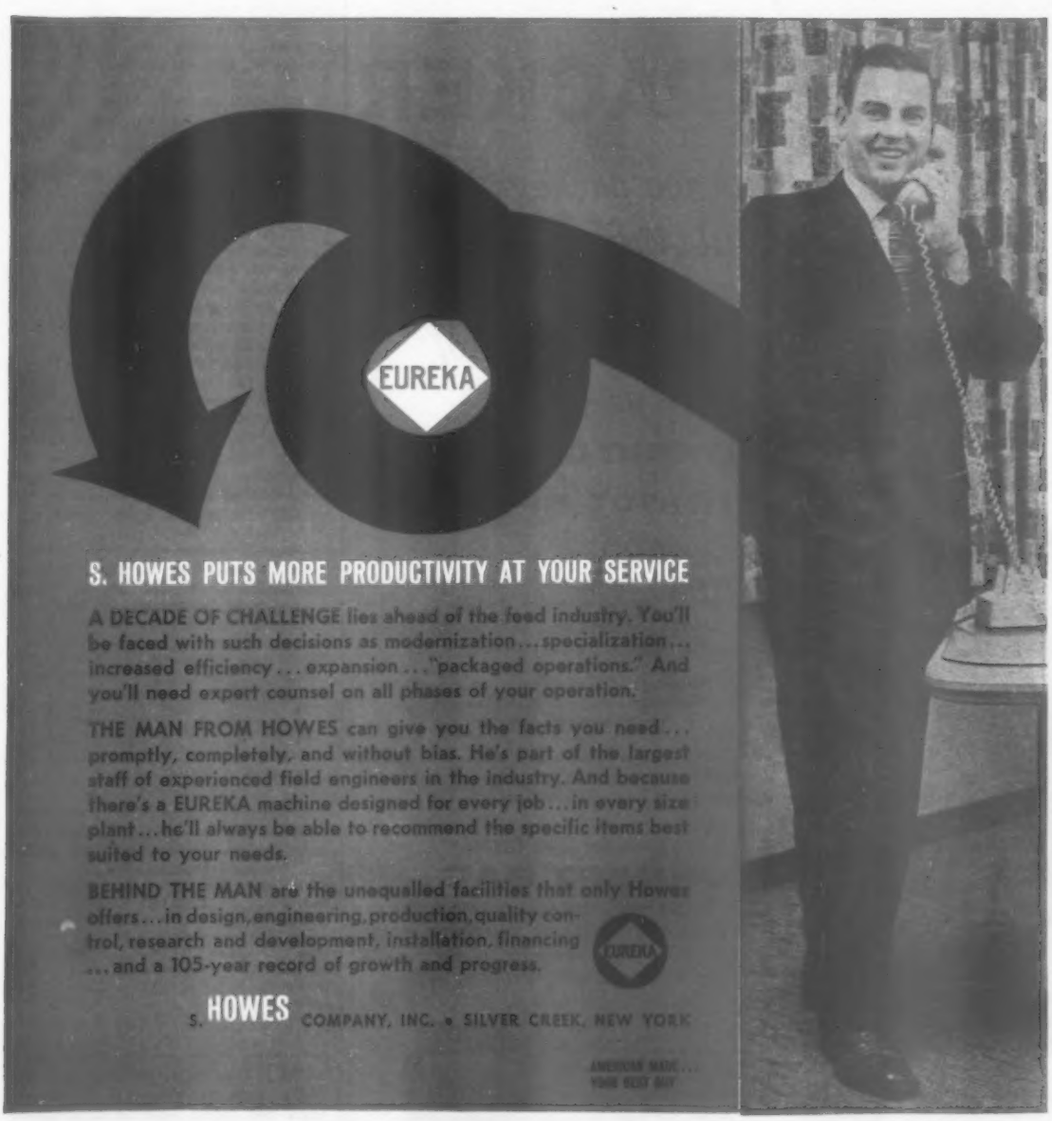

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Cheaper Laying Rations

"Proper amino acid supplementation of low protein diets lowers the cost of egg production and more than pays the additional cost of the amino acids."

By John H. Quisenberry and John W. Bradley
Texas A&M College

With the trend toward larger production units and lower profit margins, egg producers are searching for means of lowering production costs. Since feed cost makes up more than half of the total cost of producing eggs, it is natural for the poultryman to look here for the first means of economizing. In attempting to do so, he sometimes is tempted to place the major emphasis on the price of laying mash. Unfortunately, this frequently results in an increase in feed cost per dozen eggs rather than a reduction.

The alert and profit-conscious poultryman measures his feed costs in terms of the cost per dozen 24 oz. eggs rather than per hundred pounds or per ton of feed. Since sorghum grain is a much cheaper energy source in the Southwest than corn, research workers in the department of poultry science at Texas A&M College have been attempting to find the most economical way to use high levels of sorghum grain in laying diets. Until the past year or two, when new varieties and hybrids of grain sorghum became available, the protein content generally has been approximately 11%. The protein content of corn, on the other hand, has been approximately 8.00 to 8.5%. In the Corn Belt, where corn is used largely as a source of energy or carbohydrates in laying diets, the difference in protein content has to be made up with soybean oil meal. This makes a better amino acid balance and permits the use of lower protein levels than generally have been found to give best results in Texas. In the December, 1959, Texas Feed Service Report, 13, 15 and 17% protein laying rations were compared. These diets contained 45 to 60% ground sorghum grain. In a report on this same work at the 1960 Cage Clinic, the results were translated into the ingredient costs of the feed for each protein level and the feed cost per dozen 24-oz. eggs. These are given in Table 1.

EDITOR'S NOTE: The accompanying article is from the Texas Feed Service Report of Texas A&M College, College Station, Texas. Authors are Dr. John H. Quisenberry and John W. Bradley. Dr. Quisenberry is head of the department of poultry science at the college and Mr. Bradley is farm superintendent.

The ingredient cost of the 13% protein ration was 16¢ per 100 lb. lower than for the 17% protein. However, when these diets were fed to the hens, the birds on the 13% protein diet required 13.71¢ worth of feed to produce a dozen large eggs, but the feed ingredient cost for a dozen large eggs on the 17% protein diet was only 11.06¢.

If a means could be found for obtaining the same rate of lay, same egg size and same feed efficiency on the lower protein diet as on the 17% protein diet, the feed cost per dozen eggs could be lowered significantly.

A new comparison is in progress to determine if the supplementation of a low protein diet with amino acids would improve egg production. Three protein level diets are being compared, 14, 16 and 18%. Each is being fed without supplementation, supplemented with 2 lb. of methionine, 6 lb. of lysine and with a combination of 2 lb. of methionine and 6 lb. of lysine per ton of diet.

The effects of these diets on egg production during the first seven months of lay are given in Table 2. Amino acid supplementation of the 18 and 16% protein diets did little to improve production, but resulted in marked improvement in the 14% diet.

Feed ingredient costs per dozen 24-oz. eggs, including the costs of the amino acid supplementations, are given in Table 3. Proper amino acid supplementation of low protein diets lowers the cost of egg production and more than pays the additional cost of the amino acids. In years that protein concentrates are scarce and prices correspondingly higher, the saving would be increased greatly.

These data are preliminary only. Whether, after the birds have completed a full year of production, these savings will become more pronounced or less, remains to be seen. We believe these and similar studies here and at other experiment stations are leading the way to lower costs.

TABLE 1. Feed Cost Per Dozen Eggs as Influenced by Dietary Protein Level, April 11, 1959-March 6, 1960

Protein level, %	Feed cost, $ per 100 lb.*	Feed cost, cents per doz. 24 oz. eggs
13	2.87	13.71
15	2.96	12.16
17	3.03	11.06

*Average ingredient cost only.

TABLE 2. Percent Hen-Day Production as Influenced by Protein Level and Amino Acid Supplementation

Dietary supplementation	18% protein	16% protein	14% protein
None	84.1	83.6	75.5
Lysine, 6 lb.	82.2	83.2	80.3
Methionine, 2 lb.	80.6	82.5	78.4
Lysine, 6 lb., and methionine, 2 lb.	83.6	81.5	83.0

TABLE 3. Feed Ingredient Cost per Dozen 24-Oz. Eggs as Influenced by Protein Level and Amino Acid Supplementation

Dietary supplementation	18% protein	16% protein	14% protein
	Cents		
None	10.69	10.47	11.56
Lysine, 6 lb.	11.27	10.54	10.99
Methionine, 2 lb.	11.41	11.17	12.27
Lysine, 6 lb., and methionine, 2 lb.	11.54	11.91	11.27

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Propose Continuing Study of Pennsylvania's Poultry Industry

UNIVERSITY PARK, PA. — Continuing studies of Pennsylvania's poultry industry by a statewide council were proposed recently at a Pennsylvania State University seminar on problems from changing trends in agriculture.

Dr. A. J. G. Maw, head of the university's poultry department, and six other staff members presented analyses of poultry production and marketing and related activities. Industry leaders attended.

Panelists appearing with Dr. Maw were Werner J. Mueller and Dr. Edward J. Buss, research and instruction, and three extension specialists, A. Kermit Birth, marketing; Julius F. Bauerman, food technology, and F. H. Leuschner, production. Dr. Ralph L. Baker, marketing research, presided.

Dr. Maw proposed formation of a poultry council embracing all elements of the state's poultry industry. Such an organization, he said, could deal with statewide problems and coordinate efforts for strengthening the industry.

Speakers emphasized expert management and efficient operation. Dr. Buss urged systematic cost programming on feed, medication, housing and other factors. He advocated producer goals based on facilities and abilities, and use of records for projecting future operations. Stressing economies in production, he suggested as "marks to shoot at" net cost goals of 14¢ lb. for broilers, 21¢ for turkeys, and 28¢ for a dozen eggs.

Future Demand

Population gains by 1970, Mr. Mueller said, will require a boost in national production figures of 798 million dozens of eggs, 844 million pounds of chicken meat, and 174 million pounds of turkey meat, based on present per capita consumption.

Increased promotion, Mr. Mueller said, would help sell more poultry and eggs. He estimated poultry promotion expenditures by industry-supported organizations at $750,000 for the whole country, as compared to $5 million for promoting red meat and $11 million on dairy products.

Closer coordination between producers and markets through exchange of basic cost information, and possibly by marketing agreements, could help the industry adjust to current marketing conditions, it was pointed out by Mr. Bauerman. Credit sources, he said, need more marketing information for loan purposes.

Mr. Birth told the group: "It takes both marketing agents and producers to plan an efficient marketing program. By working together they can help also to keep production in line with demand."

Mr. Leuschner cited trends in Pennsylvania to larger and fewer poultry operations. He said poultry is second only to dairying among the state's leading agricultural industries. Producers, he said, maintain 18 million layers, raise annually 50 million broilers and 1.5 million turkeys, and produce 3.5 billion eggs.

MONTANA FIRE

WOLF POINT, MONT.—Plans for a modern new Occident elevator are underway here as salvage crews work to see what can be recovered of 150,000 bu. of grain hit recently by disastrous fire. All buildings and equipment in the fire are considered a total loss, according to Occident Co. officials, but some grain may yet be salvaged for feed or seed.

Manager Appointed

VINELAND, N.J.—David W. Gardella has been appointed manager of John W. Eshelman & Sons, Inc., local Red Rose feed distributor located at Vineland.

Mr. Gardella succeeds James M. Herr who is retiring May 31 after serving as manager for the past 17 years.

Prior to his appointment as manager, Mr. Gardella served as warehouse supervisor and sales and service representative. He joined the Eshelman organization in 1936.

IOWA CONSTRUCTION

WASHINGTON, IOWA — The Freshwaters Feed & Grain firm has opened its new feed plant here. The new plant, which has been under construction for six months, is managed by Delmar Romine. The new plant has facilities for feed grinding and mixing, bulk delivery, grain banking and corn drying.

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Quoted from Dr. H. E. Bechtel, Feedstuffs Jan. 21, 1961

Vitamin A vs Carotene for Beef Cattle

• Many feedlot rations are supplemented with from 8,000 to 30,000 I. U. daily of stabilized vitamin A, because of the uncertainty of the biological availability of carotene from yellow corn and harvested forages.

W. M. Beeson Dist. Feed Conf. March 8, 1961

Vitamin A Necessary for Glyconeogenesis

• The animal in the very early stages of vitamin A deficiency is blocked from forming glycogen from glycerol, from lactate, and from acetate—but not from glucose. Using C^{14} as a label, Dr. B. Connor Johnson reported this finding to the Illinois Nutrition Conference February 1961.

Vitamin E Analysis

• Reliability of a shortened chick assay method for vitamin E has been studied. Essentially the same results were achieved with a two-week supplementation test, and a three-day test in a comparison of four alpha tocopherol products.

L. D. Matterson, M. W. Wilcox ANRC 1960

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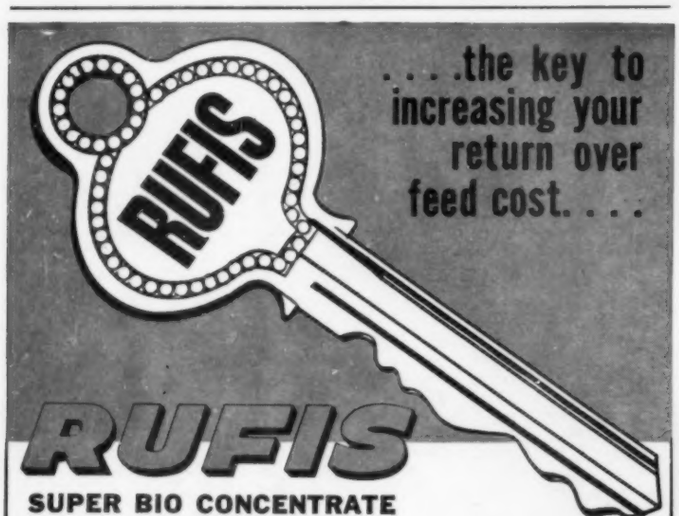

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Here's Why . . .

Hog Feeding Experiment in South Is Catching Poultrymen's Interest

By Robert H. Brown
Feedstuffs Special Writer

Why should a hog feeding experiment in the deep South be attracting the attention of poultrymen? Mainly because the hogs' daily diet includes throw-out chickens from a processing plant. Poultrymen are watching the development of the project with considerable interest because such use of discarded birds gives them another idea of what might be done with chickens that fail to pass federal inspection.

The hogs also are fed stale bread from a bakery and yellow corn. Three times a day they receive a mush prepared from the discarded chickens, the bread and the corn.

And that's not all that's different about this feeding experiment. The hogs are grown in a new type of parlor—an incorporation of ideas from Germany.

So poultrymen are not alone in showing their interest in this experimental hog operation. Feed men, swine producers and others are wondering what the results will be.

On Governor's Farm

The parlor is located on the farm of Gov. Buford Ellington of Tennessee, which is near Franklin, south of Nashville. The concrete-floored parlor has a total of 600 pigs on it at the present time.

Sponsors of the parlor believe it will be possible to produce marketable hogs at a cost of 7-8¢ lb., including feed and labor.

One of the reasons why the operation was established is that Gov. Ellington was disappointed when a packing house, seeking a location near Nashville, decided not to locate there because of a fear that not enough hogs would be available. Gov. Ellington and three partners decided to see what could be done to accelerate hog raising in the state.

Steam-Cooked Mush

The chickens, bread and corn are steam-cooked in a mixer "vat" in a portion of the parlor set aside for that purpose. A gas-fired steam generator sends steam through the vat. The mixture is cooked three to four hours at a time, depending on the volume available for the day and the number of animals to be fed.

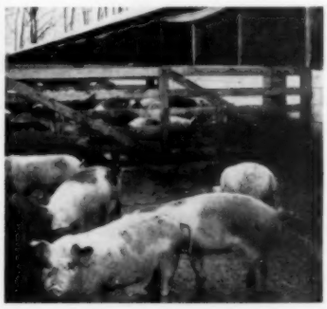
The whole, dressed chickens are hauled in trucks from a Nashville poultry operation. The birds, packed in iced barrels to prevent spoilage, are dumped whole into a large grinder, which chops them into minute pieces. The bread is processed in a similar fashion.

At the present time, the animals' diet consists of one third bread, one third corn and one third crushed chicken. Each barrel of chickens weighs around 900 lb. and since the bread is ready-wrapped with the weight stamped on the package, it is comparatively easy to keep track of the amount of bread used. A Butler bin has been erected in an elevated position outside the parlor. Corn flows from the bin through a gravity-fed pipe into the "kitchen."

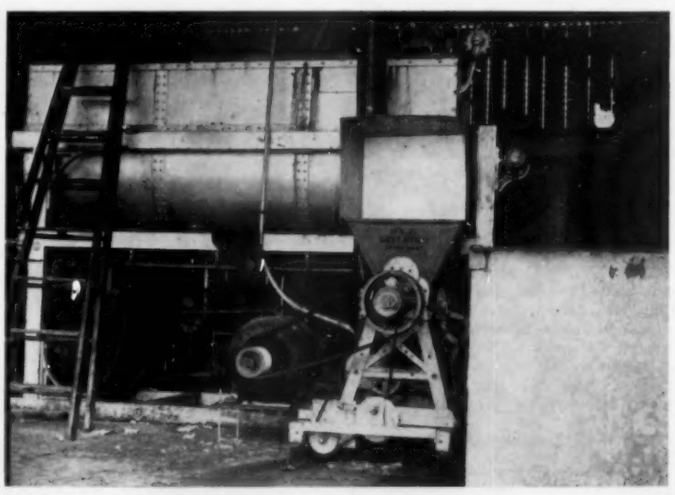
Since the diet is strictly an experiment, it is subject to change, operators of the parlor said. Monthly analysis is made to determine the progress of the animals from a gain standpoint, economy and health.

The processor from whom the discarded chickens are being obtained previously sold the birds to a rendering plant in Shelbyville.

Significantly, it was pointed out that stale bread is a glut on the market wherever wholesale bakeries operate. This is bread that has been left on grocer shelves too long and is



SEPARATED BY AGE—Gates separate various age groups of hogs fed ground discarded chickens, stale bread and corn in one third portions of each. Inside and outside pens are floored with concrete.



"KITCHEN"—This view is of the "kitchen" at the Tennessee hog parlor which is experimentally feeding discarded chickens, stale bread and corn. Each day, up to 3,000 lb. of the mixture is cooked and fed. Whole dressed chickens and bread are put into a grinder (center) and ground to a pulp, which is then carried to the mixer "vat," where, under steam generated by gas, the mixture is cooked for several hours. Yellow corn is then added.

INSIDE PARLOR—The experimental hog feeding project operated on the farm of Gov. Buford Ellington near Franklin, Tenn., incorporates a number of ideas originated in Germany. Feed troughs are located beneath the sloped, wood fences at left. These fences are collapsible and at feeding time are folded downward to keep the hogs from reaching the troughs until full. Concrete floors slope two ways for easy drainage.

picked up by the routemen. The bakery delivers the stale product to the farm in truck loads several times a week.

Each morning the "kitchen" goes into operation first. It is possible to cook up to 3,000 lb. in the steam vat.

Operators Listed

The experimental parlor is being operated by the governor; Jerry Womack, Tennessee Poultry Co.; Earl Herndon, Nashville, and Russell Brothers, also of Nashville.

"We had to get special permission from the federal government to use the chickens for hog feed," Gov. Ellington said.

Actually, the farm has a capacity for 900 feeder pigs, although only about 600 are being fed at the present. If the program proves successful, the size of the operation will be increased with the addition of four more sheds. Eventually the operators hope to have a capacity of 5,000 animals.

The building is 328 ft. long and 33 ft. wide. Concrete flooring extends from one end to the other.

Most of the ideas for the parlor came from Germany. The concrete flooring was laid out so that no matter how or where water may fall, it has a natural drain, which makes washing simple.

There are inside and outside pens, all concrete-floored. The animals do not touch ground from the time they are brought in until they are sold.

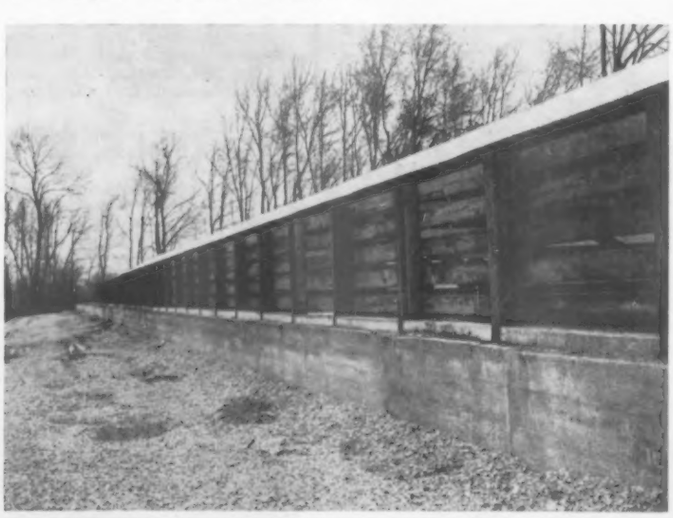
The outside pens are 18 by 33 ft. These adjoin the interior eating and resting rooms. The two pens are connected with a concrete block entrance for the pigs to come and go as they like. One thing the operators have noticed with this arrangement is that the animals go to the outside pens when they desire relief.

Conversion Possible

The large outside pens are equipped so that gates may be opened and the entire area used as one huge roaming area. But so far the pigs have been separated by age and roaming on a mass basis has not been used. These outside pens are on a center-slope with a drainage trough in the center, which carries water to the far end where it drains into a pit and subsequently to a small creek running near the farm. Manure is collected in a vehicular fertilizer spreader.

After the feed has been prepared

STALE BREAD—Delivered from a wholesale baking plant, stale bread is piled high inside pig parlor at Franklin, Tenn. This bread and much more like it is ground with discarded chickens and yellow corn, then steam-cooked.



OUTSIDE PENS—This is an over-all view of the outside pens, which are connected to those inside the building. In and out access is available to hogs at all times.

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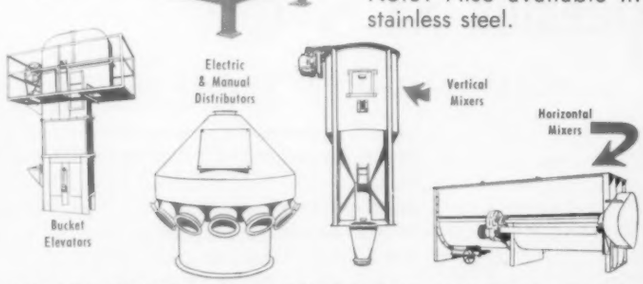

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in the cooker it is hauled in a two-wheel dump cart to each of the pens. To feed, the fence is swung slightly inward, which opens the troughs for dumping feed and at the same time keeps the animals from reaching the troughs until the feeder has finished filling. Once filled, the fence swings back into place and is locked with lock bolts, similar to those placed on ordinary doors.

The feeding and watering troughs are also equipped with these bolt locks and regularly, each day, they are opened and hosed out thoroughly with the water hoses.

Feeders from Local Area

Feeder pigs are being bought at 35-40 lb. from breeders in the area.

Upon arrival these pigs are not put on the diet of chicken, bread and corn immediately. Rather, in most cases they are started on starter pellets. However, each batch of new arrivals is handled individually, depending on the size and age. In most cases, they are put on the chicken-bread-corn diet at about 75 lb. But some of the new arrivals are fed on a combination of the mush and starter pellets.

Ray Frazier, who has charge of the operation, said the ration may be started on a gradual basis and increased a bit each day or week as the pigs grow.

Opened Last January

The parlor was opened last January. So far, 26 hogs have been sold. But, as Mr. Frazier pointed out, the bulk of the first batch is still being fattened. It is figured the animals will be ready for market in 4 to 4½ months.

Gov. Ellington, who is vitally interested in the project in an effort to stimulate other people to raise hogs, figures that if the plan is successful the cost of feed and labor will run from 7-8¢ lb.

The yellow corn is being used as a means of providing the needed fiber. The stale bread, the operators figure, cuts down on the fat percentage of the chicken.

The entire operation is being handled with only one man and a helper. Using the dump cart method of feeding, one man can feed the 600 head in an hour or so. The helper hoses down the parlors, tends to repairs and the cooking.

Since feeding is done three times a day—on a schedule very much like human beings—morning, noon and evening, there is sufficient time for Mr. Frazier and his assistant to work at cleaning up in between meals.

"We hose everything down at least once a day and sometimes twice a day. We have a well that produces water at 90 lb. pressure and with that kind of pressure the entire concrete floor can be cleaned in just a few hours every day," Mr. Frazier said.

Recent Study Shows Some Enzymes May Have Applications

ST. LOUIS—"Recent investigations indicate that some enzymes may have practical application in some instances," states a recent issue of the Nutrition News Bulletin of the Ralston Purina Co.

The bulletin said this view of enzyme efficacy has come about recently although numerous tests reported in experiment station literature during the past 40 years "have indicated no significant benefits from the use of enzymes as feed additives." The general conclusion has been that "ability to digest sufficient feed has not been a limiting factor in the performance of normal animals on adequate rations," the bulletin continued.

Practical applications for the enzymes as mentioned in the bulletin are:

(1) As supplements in the feeding of baby pigs on rations other than milk.

(2) As supplements in the feeding of chicks and turkey poults on rations containing barley grown only in certain areas.

(3) As supplements in the feeding of beef cattle on rations containing well matured low moisture corn (around 10% moisture). Grains containing 14% or more moisture have not consistently been improved by the addition of enzymes.

Ralston Purina's bulletin said, "The exact enzymes required for supplementation of barley for poultry and corn for beef cattle have not been determined. All that is known is that significant responses have been obtained with some commercial enzyme products including particularly those obtained from certain bacteria and fungi. These are known to contain several kinds of proteases, amylases, lipases and other unidentified enzymes.

"The future of enzymes as feed additives would seem to depend on products standardized with respect to the content of a specific enzyme for increasing the availability of a specific substance in the ration and free from objectionable substances. It remains to be seen whether such products can be supplied at a price permitting profitable use in feeds."

Plan Feed Mixing Plant

MAPLETON, IOWA—A new industry will open in Mapleton this summer. The Farmers Co-op Oil Assn. has announced that it will build a custom grinding and feed mixing plant here.

The feed mixing plant will be the final step of a three-step expansion program set forth by the co-op in 1960. The first step of the expansion program was installation of a liquid fertilizer plant. The second step was construction of a modern service station and feed warehouse at Danbury.

The feed mixing plant will have a 32 by 100 ft. building and a production capacity of 75 tons a day. It will be equipped with a roller mill, feed mixer, 75 h.p. hammermill and a 50 ton, 60 ft. truck scale.

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Canadian Egg Yolk Color Chart Shows Preferred Shades

OTTAWA — Discriminating tastes of the Canadian consumer are being pampered, even to the shade of yellow of egg yolks.

Though the color of the yolk has no effect on the food value of the egg, it is reported that many people find a pale yellow yolk unappetizing and others object to a dark yellow color. With this in mind, the poultry products division of the Canada Department of Agriculture has come up with a yolk color chart which may yet become a standard in the industry.

Color of an egg yolk is determined by the pigment in the feed offered to the hens. Thus, if the eggs being laid by a specific flock are proving unpopular with housewives because of the color of their yolks, the problem can be overcome easily by altering the diet.

D. A. Fletcher, special projects officer with the poultry division, started the task of creating a new yolk color chart more than three years ago.

Working closely with the National Research Council's paints and oils research laboratory, he tested about 200 shades of yellow before settling on a representative group of 15.

Having determined the 15 shades of yellow, Mr. Fletcher and his colleagues put the colors on metal disks, each of which contained a hole the size of a yolk to facilitate the job of identifying the kind of eggs preferred by the average consumer.

Visitors to the Royal Winter Fair in Toronto asked their preference in yolks, unanimously selected numbers 6 to 10 on the color scale—rejecting the top five as too dark and the bottom five as "anemic."

The Toronto survey was a joint undertaking of the poultry division, the Ontario Agricultural College and the Poultry Products Institute.

Not only could the new color chart set a standard for all of Canada, but it could be used to good advantage in the frozen egg business where the color of the yolk is an important factor, department spokesmen say.

Given wide application, it is said that the chart should result in even more palatable eggs for the breakfast table.

Charts can be procured from Canadian Government's Specification Board, Montreal Road, Ottawa 2.

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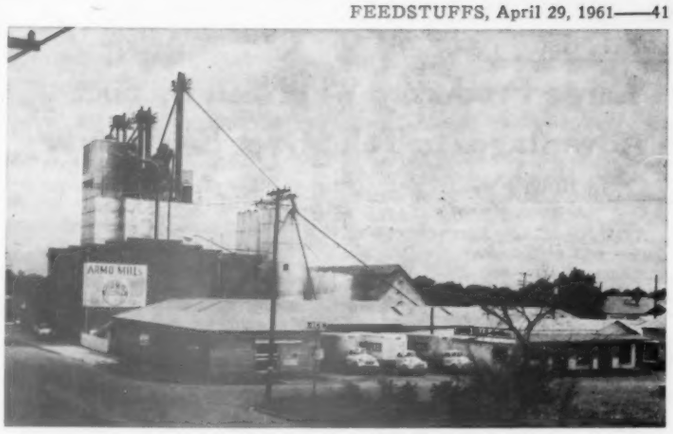
Guye W. Troute Joins Dawe's Laboratories

CHICAGO — Guye W. Troute has joined Dawe's Laboratories, Inc., as territory manager. The announcement was made by Z. Z. Dworkin, Dawe's western regional manager.

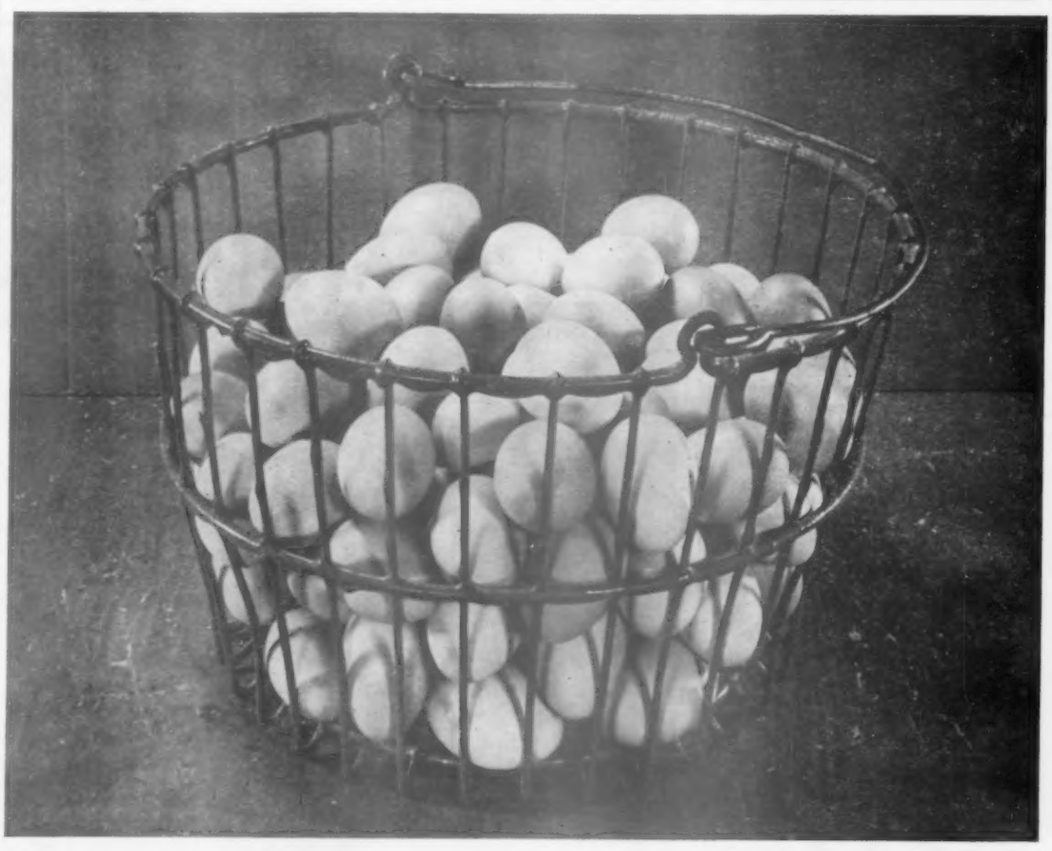
Guye W. Troute

Mr. Troute will headquarter in the company's western region office at Palo Alto, Cal., and represent Dawe's in northern California and Nevada.

Mr. Troute is a graduate of North Carolina State University. He was associated with General Mills, Inc., animal feed division, for the past 14 years.



ARMO MILLS—Shown here are the facilities of Armo Mills, Inc., Lockhart, Texas, purchased by Central Soya. The facilities are the first in Texas for the McMillen Feed Division of Central Soya. (Feedstuffs, April 22)



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For one thing there are more of them. Among the proven meat-type females which bird consistently lays the most eggs? The Nichols 108, of course. But now the big news is what's *in* these eggs—the offspring. In the first hatch of the 15th Maine Test the three 108 Cross entries, sired by three different males, finished 2nd, 3rd and 4th in points spread out of 20 entries! (The winning entry came from a cross far behind in egg production.) What's more, recent field records from the most important broiler areas show that today's 108 Crosses are matching the best records in growth and conversion. Under intense research pressure America's first crossbred female is realizing its high potential as a meat-type breeder. Meantime 108 flocks continue to average close to 160 *hatching* eggs per hen housed!

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Georgia Group Told—

'Large Producers Will Need Distinct Advantages to Take Over Egg Industry'

By DEWEY McNIECE
University of Georgia

ATHENS, GA. — Large egg producers will need to have distinct advantages if they are going to take over the egg production industry.

That was the opinion of Dr. Thomas J. Harrold, Harrold's Hatchery, Winterville, Ga., presented in his talk on "Are Large Producers Taking Over?" at the recent Commercial Egg Production Short Course at the Georgia Center for Continuing Education here.

He listed the following factors which he feels the larger producer will have to have: (1) Availability of capital, (2) large enough farm so that he will have a market advantage, (3) cost advantage through discounts and low rates of interest, and (4) production of feed from the "ground up."

He told the group that there is a wide difference in the meaning of a "large" producer depending upon the area of the country.

In explanation, he pointed out that the average of pullet deliveries in the Midwest was 500 pullet chicks; in the East, 1,000 pullet chicks; in the Southeast, 2,000 pullet chicks, and in California, 5,000 to 10,000 pullet chicks. This was pointed out to show that a large producer in the Midwest may even be smaller but may have a flock the same size as a small producer in the Southeast or West, Dr. Harrold said.

He concluded his talk by making seven predictions. They are as follows: "(1) We will see in the future, units of 3,000 or more hens with producers marketing direct, (2) holding hens for 15 months or more of lay, (3) 'breaking cycle' by depopulating on a given farm for a relatively short period of time, (4) more started pullets, (5) better feed conversion, (6) yearly hen house mortality reduced to 6-9%, and (7) cash payment pattern developed for feed and supplies."

Health Problems

Dr. Charles N. Dobbins, Jr., head, extension veterinary department, University of Georgia, discussed current poultry health problems. He pointed out that there has been a large increase during the past year in the incidence of several poultry diseases. He listed pullorum, coccidiosis, leucosis and fowl cholera as the ones in which there has been the most dramatic increase. Dr. Dobbins showed slides to demonstrate that it was difficult to diagnose diseases by just using antemortem. He indicated that he felt laboratory diagnosis was necessary in almost all instances.

Dr. Dobbins told the group that the instance of fowl cholera had increased faster than for any other disease during the past year. He recommended that the poultrymen get a laboratory diagnosis to determine whether or not the birds had fowl cholera and, if they did, to treat them with a bacterin and high-level antibiotic feed. Other methods of control would be cleaning and disinfecting the premises and leaving the houses vacant for at least one month following the removal of a diseased flock, he said.

One mode of spread for diseases that Dr. Dobbins said he felt was not receiving sufficient attention is the footwear of servicemen and poultrymen. He stated that even though poultry houses may be 3 to 4 miles apart as the crow flies, they may be in reality 40 ft. apart. His reasoning is that servicemen or poultrymen who visit one flock will get into their cars without cleaning and disinfecting their footwear, drive to the next farm and go into the poultry houses.

Dr. Fred Saunders, associate agricultural economist, department of agricultural economics, University of Georgia, told the group that the egg industry in Georgia has become of age. He stated that no other expenditure of time would yield larger returns than keeping and analyzing proper records. He emphasized the importance of records as a basis of studying what was accomplished in the previous year and also as a means for planning for the coming year.

Use of Egg Futures

Dr. J. Clyde Driggers, chairman, poultry division, University of Georgia, discussed "How to Use Egg Futures to Protect Your Profits."

He said, "During 1961 would you be willing to accept a net profit of up to 6¢ a dozen for all the eggs you produce? If you are, and if your costs of production are 31¢ or less, you should use the egg futures market as a tool to assist you in obtaining these profits, provided you can sell November or December contracts (one contract is 15,000 doz.) for 37¢ a dozen or higher.

"The means of protecting profits advocated today is provided through a transaction called 'hedging' and usually this is done on the Chicago or New York mercantile exchanges. A person 'hedges' by selling a futures contract at a given price which offsets production which he anticipates from his own flock or which he purchases. Later he delivers the actual eggs or buys back the futures contract, whichever is to his advantage. It should be pointed out that hedging is a procedure used to assure profits but in accepting a profit or 'no loss' position you also remove the benefits of receiving additional profits if cash prices rise. Whenever desired profits can be assured, however, a good business procedure is to take advantage of it.

"The commercial egg producer can hedge in two ways. The first of these is a 'speculative' hedge where there is no intention to deliver the eggs

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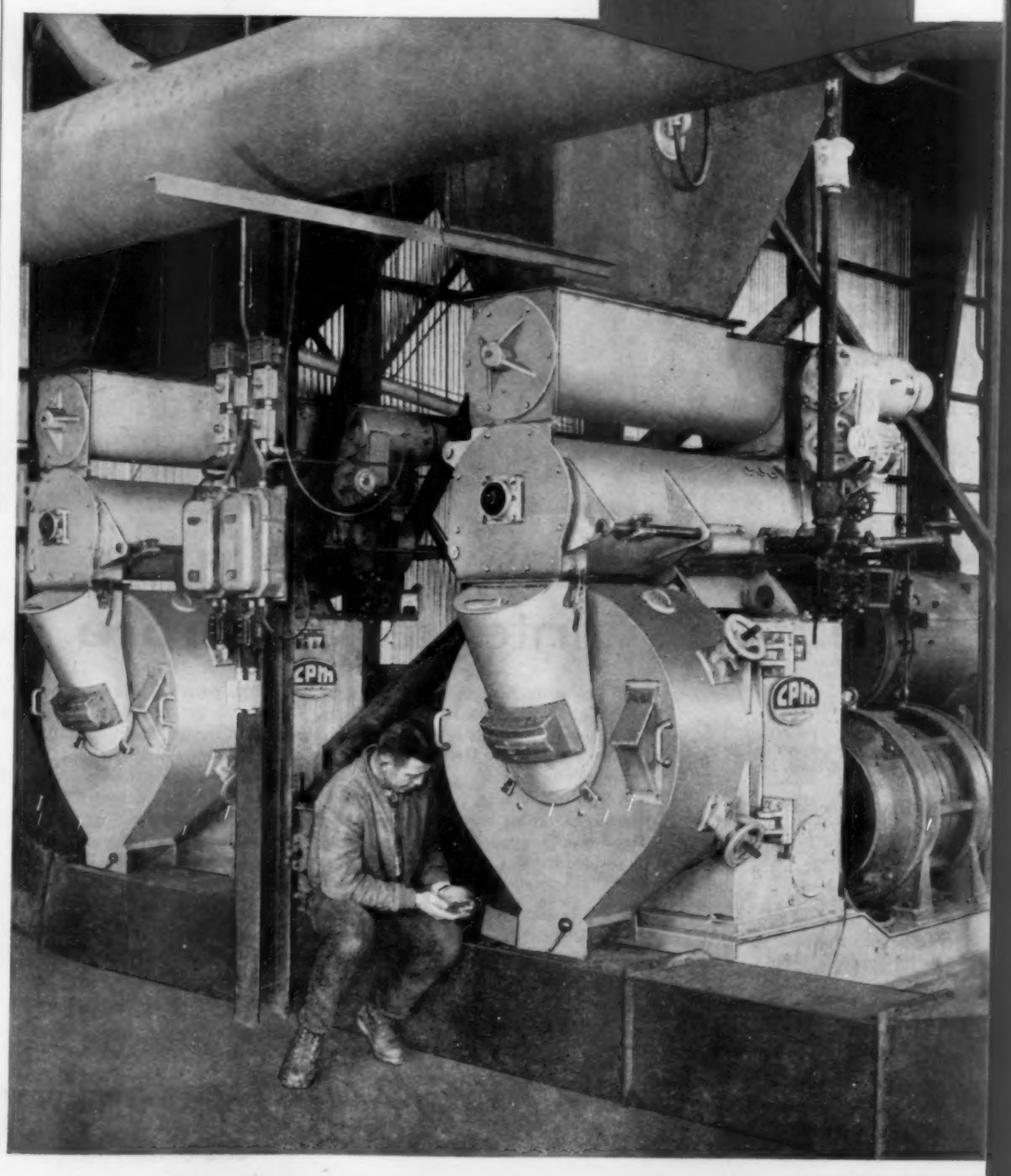

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which are sold on the futures market just as any speculator would do. The difference is that the commercial egg man who has 1,000 or more layers on his farm is actually producing the equivalent of one futures contract, whereas a speculator is not. The second method is a true hedge where the contracts are sold on the futures market and actual eggs are stored and delivered at the specified time or the contract is bought and the stored eggs are sold on the cash market. The latter method has some disadvantages in that the eggs have to be graded, packed, stored and delivered under acceptable conditions.

"This is the way hedging works: Sell enough November or December contracts on the futures market between now and May 1 to equal your annual production or the quantity you wish to store (whichever method you choose) when the cash price is as high as or higher than the futures market and when each is above 37¢ a dozen. This is based on the normal or typical movements of futures and cash prices when you assume the cash should be above the futures.

"To 'lift' the hedge, it is necessary to buy back the futures contract or make delivery of the stored eggs. This should be done at a time when it is advantageous to the hedger, but usually speculative hedges are lifted in the month preceding delivery date.

"Each 'speculative' hedge contract requires a margin deposit (between $500 and $1,000 depending on the broker), and to complete the execution requires a brokerage fee of $36. Trading can be done on the Chicago or New York mercantile exchange but because more trading is done in Chicago, it is the exchange of choice. Any local broker such as Poultry Commodities Corp.; Merrill Lynch, Pierce, Fenner and Smith; Courts & Co., or Goodbody & Co. can be dealt with in confidence and orders can be placed through them.

"This year, with 39% more egg-type chicks hatched in January and 44% more eggs in incubators Feb. 1 than last year, it appears that protecting profits through the use of egg futures trading is most timely. Such a procedure is recommended for the commercial egg producers of Georgia this year."

Promotion Plan

An egg promotion checkoff plan, made possible by legislation passed at the last session of the Georgia General Assembly, was discussed by Abit Massey, executive director, Georgia Poultry Federation; Curtis Collier, Southeast representative for Poultry & Egg National Board, and Boyce Dyer, Georgia State Department of Agriculture.

This legislation makes it possible for any commodity group to set up a checkoff plan to secure finances for marketing and promotional programs. A referendum will have to be prepared and approved by the egg producers before it will come into effect, it was pointed out.

Labor Efficiency

Dr. Jack Thompson, associate professor, department of agricultural economics, University of Georgia, and Henry Massey, extension poultryman, Agricultural Extension Service, University of Georgia, discussed labor efficiency. They emphasized that motions in a straight line or in a sweeping arc are much more efficient than abrupt changes in direction.

Dr. Thompson suggested that the poultrymen list all irregular jobs and attempt to combine these with their regular routine chores so as to achieve as much efficiency as possible. He emphasized that very little savings were possible with only one change in technique used but that a combination of changes could save considerable labor.

Increase Consumption

A panel discussion on "How to Increase Egg Consumption" was moderated by Dr. Kenneth N. May, poultry products technologist, poultry department, University of Georgia. The panel members were: Dr. Richard Noles, poultry management specialist, poultry department, University of Georgia; Harold Jones, agricultural economist (USDA), Department of Agricultural Economics, University of Georgia; Eddye Ross, state home demonstration leader, Agricultural Extension Service, University of Georgia, and Wesley Harris, Georgia Chicks, Inc., Cartersville, Ga.

It was the consensus of the panel that the consumer really could recognize quality even though some studies have been made to show otherwise. They suggested more efficiency in merchandising eggs and pointed out that PENB promotional material could be used to a very good advantage. It was thought that if new egg products are to be developed that the industry must do this and that the universities continue to do basic research.

CATTLE SEX, SIZE MAY BE CONTROLLABLE

HOUSTON, TEXAS — A project that may allow cattle breeders to control the sex and size of their animals was announced here by the director of the Southwest Agricultural Institute of San Antonio.

Dr. Judd Morrow said the institute is toying with the idea of using electronic vibrations to kill either male or female cells which would allow a bull to produce only male or female offspring.

The same procedures would also allow breeders to control mutations in animals and make it possible to regulate physical characteristics.

Dr. Morrow mentioned the institute studies before a meeting of the Houston Rotary Club.

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Whether your special-situation requirement calls for a Model "200" or a much smaller machine, you'll find that the complete CPM line offers you the widest, finest choice ever available. Now is a good time to see the man from CPM. His expert help and assistance may well mean a more highly profitable feed production program for you this year and the years ahead. *Remember: More California Pellet Mills are sold today than all other makes combined!*

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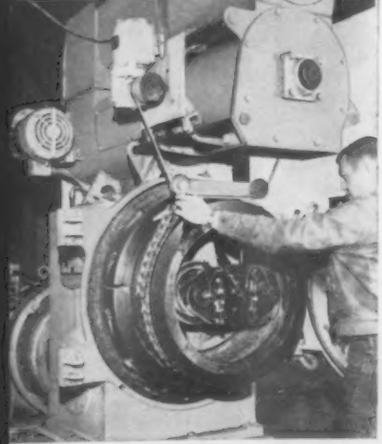
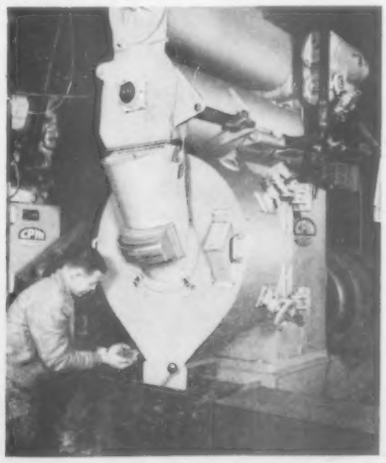


Look at the size of the pellet die, shown here being positioned on the Model "200"! Die is more than twice the size used on largest standard model pellet mills today, yet is easily changed by means of built-in electric hoist.



Charles "Ozzie" Harris, manager of Delta Dehydrating Corp.'s Clarksburg, California plant, checks pellet run on CPM Model "200". This pellet mill is operated 24 hours per day during peak production periods, producing both alfalfa and beet pulp pellets in ¼" size.

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BY SPENCER H. MORRISON, PH.D., D. V. M.

Arginine in Chick Growth

● E. L. Patterson, R. A. Milstrey and T. H. Jukes, Lederle Laboratory, Pearl River, N.Y.; Poultry Science, Vol. 40, No. 2, pp. 459-467, March, 1961.

ABSTRACT AND COMMENT

Over the years a great deal of work has been conducted concerning the requirement of the growing chick for the essential amino acid; arginine. Most of the work has been conducted utilizing purified or semi-purified diets utilizing casein as the chief protein source. The work in this field is too voluminous to discuss in this column, but certain facts appear to be established as of this date.

The arginine requirement appears to depend upon the type of protein source, as it has been demonstrated that practical corn-soya diets, etc., containing about 1.11% arginine were not improved by supplements of gelatin or L-arginine-HCl plus glycine (1956, Snyder et al; Krautman et al, 1957, 1958). However, it has been repeatedly demonstrated that casein diets were improved by such supplemental additions (Almquist and Merritt, 1950; Krautman et al, 1957; Young et al, 1953).

It has been suggested by some that the apparent lower arginine requirement on practical diets was due to the existence of an unidentified factor of plant origin which enhanced the utilization or otherwise rendered the arginine more available.

Furthermore, it has been demonstrated by Edwards et al (1958), that the arginine requirement may vary with the breed of chicken. Also, the arginine requirement may be altered by changing calorie to protein ratios (Scott, 1958).

Of all of the amino acids studied, arginine appears to have a more variable requirement and ranges in requirement from as low as 1.16% to as high as 2.06% of the diet have been reported. Part of the explanation of this wide range is undoubtedly due to the fact that excesses of other amino acids in the diet influenced the response criteria of arginine.

Casein contains excesses of some essential amino acids, and it has been observed from rat work, etc., that higher amounts of arginine are required when excesses of certain essential amino acids are present. The work of Fisher et al (1958, etc.) has tended to confirm this observation in chickens.

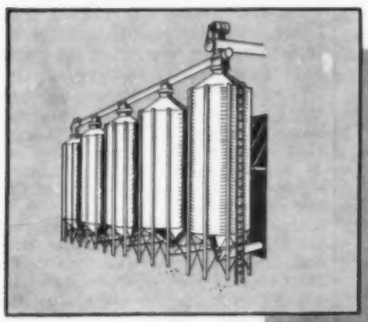
From the standpoint of amino acid balance, casein appears to be a poor choice as standard for protein evaluations as long as so little attention is paid to amino acid content and the emphasis remains on nitrogen equality between rations.

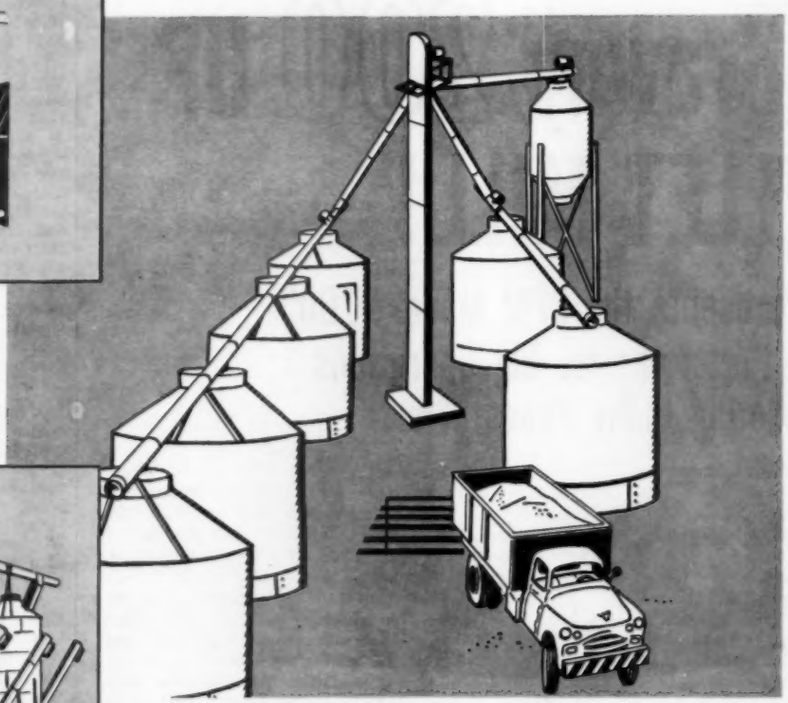
The pathology of arginine deficiency in the chick has also been very recently reported by the Missouri workers (Newberne et al, 1960). Many practical feed formulators use the concept of basing amino acid requirements, including arginine, on a specific percentage of the protein in the diet being formulated. For this purpose, a figure of 6% of the protein is often used based upon the work of Almquist and Merritt (1950). At best, such a technique is likely to be highly inaccurate unless all other formula considerations such as energy, type of ingredients, etc., are also included in arriving at the final answer.

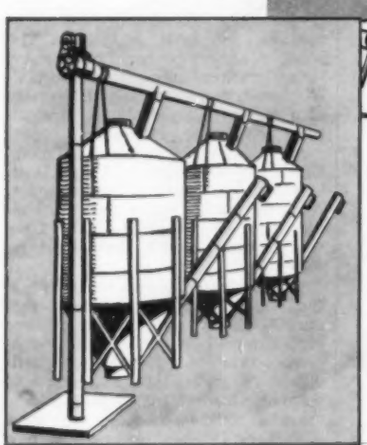
The Lederle workers have conducted several trials to help us answer some of the problems of arginine with respect to the chick's requirements. First of all, they confirmed the fact that casein was very poor in the diet as the sole source of protein in the basal diet used (casein-cerelose type). Supplements of up to 10% casein and a total of 0.93% arginine did not increase growth, nor did supplements of pancreatic digested casein. But, a good response was secured with L-arginine-HCl, indicating a deficiency of the amino acid in the test diet. In three separate experiments, there was no difference in the growth response of L-arginine-HCl as a supplement alone and with 4.5% casein. Although differences existed in the diets used, the maximum growth was obtained from 0.5% L-arginine-HCl, which calculates to be 1.03% and 1.17% total arginine in the two diets.

These workers showed that the poor growth of the chicks on casein was related to more than the low arginine content. It appeared that the inadequacy was one primarily of an imbalance involving arginine rather than a simple deficiency or one of unavailability.

One of the most interesting aspects of this study was the fact that several feed ingredients were about as active in promoting growth as would be predicted on the basis of their arginine content. These included torula yeast, brewers yeast, Difco yeast extract, defatted hog kidney, protamine sulfate, and gelatin. On







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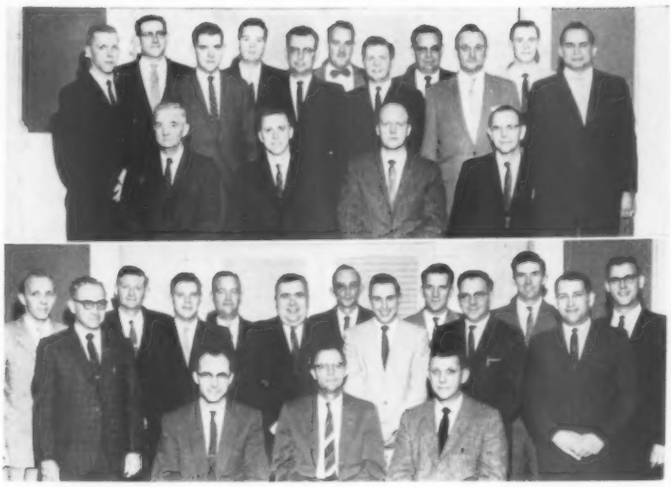

SALES AND SERVICE SCHOOL—A total of 24 Beacon Milling Co. advisors were brought to Cayuga, N.Y., for a five-day training course in sales and service matters pertaining to dairy feeds and their use. The meetings were concluded with a graduation exercise held at Springside Inn, Auburn.

The top photo shows four members of the Beacon faculty. Seated, left to right, are David G. Campbell, Beacon secretary-treasurer; Dr. Gilbert H. Porter, director of dairy research; Robert E. Miller, director of marketing, and Julian M. Wright, sales training assistant. Standing are Beacon advisors Leonard M. Defendorf, Waldoboro, Me.; Richard C. Gray, Dover, N.H.; Paul Casey, Uxbridge, Mass.; James M. Collins, Fonda, N.Y.; Russell D. Hilton, Waldoboro, Me.; Dale L. Myers, Middleburg, Pa.; William W. Martel, Westminster, Md.; Herbert M. Savage, Modest Town, Va.; Thaddeus A. Belefski, Montandon, Pa.; Arthur A. Hallatt, Syracuse, N.Y., and Kenneth A. Kurjiaka, Lancaster, Pa.

The bottom photo shows (seated left to right), Dr. Lew S. Mix, Beacon vice president; Dr. Paul E. Newman, executive vice president, and Lester O. Kent, Beacon dairy and livestock research farm manager. Standing left to right are Beacon advisors Stephen C. Thayer, Ballston Spa, N.Y.; Harold F. Shiflett, Harrisonburg, Va.; Norman C. Grose, Laceyville, Pa.; Herbert Needleman, Cambridge, N.Y.; Lyle M. Prime, Poplar Ridge, N.Y.; Joseph Boswell, West Chester, Pa.; Mark E. Reid, Broadway, Va.; Peter Jackson, DeRuyter, N.Y.; Earl C. Johnson, Oneonta, N.Y.; Charles A. Freligh, Senaca Falls, N.Y.; William R. Steele, Jr., Franconia, Pa.; Frederick J. Ouderkirk, Northumberland, Pa., and Myron H. Center, Jr., Pulaski, N.Y.

the other hand, several others not only promoted better growth than could be expected from their arginine content, but also a greater maximum growth was obtained. These were soybean oil meal, peanut oil meal, cottonseed meal and sesame oil meal.

Using peanut meal, the workers attempted to determine if some factor contained in the meal replaced or spared the arginine requirement of the chick. None was found. It was therefore postulated that the increased growth rate and greater maximum growth of chicks on diets supplemented with certain plant proteins over those of chicks on diets supplemented with L-arginine-HCl was due to: (1) arginine content of the supplement and (2) the creation of a more favorable nutritional balance of unknown character.

For practical purposes, the arginine requirement is not as high in my opinion (SHM) as at first observed by many workers. This is due to the fact that today most rations for chicks include liberal amounts of the oil meals which appear to be extremely good sources of the essential amino acid.

Pamphlet Lists Careers In Poultry Industry

SAN LUIS OBISPO, CAL.—Information on more than 50 different career and job opportunities in the poultry industry has been prepared by the poultry department at California State Polytechnic College here.

The department has prepared a pamphlet entitled "Career Opportunities in the Poultry Industry," according to Dr. Richard I. Leach, head of the poultry department.

The pamphlet, which is available free by writing to the department, lists job opportunities in the following areas: sales and distribution, supervisor personnel in large integrated units, feed industry, processors preparing poultry products, laboratory work, teaching, credit and finance.

Dr. Leach says that there are four to six career opportunities in the allied fields for each job on the farm.

For a copy of the pamphlet on Career Opportunities in the Poultry Industry, write to the Poultry Department, California State Polytechnic College, San Luis Obispo, Cal.

Reports Thyroprotein Test in Colorado

FT. COLLINS, COLO. — Feeding thyroprotein to dairy cattle "did not pay off in a five-month test conducted on the Ed Wiedeman farm near Greeley," Dairy Day visitors at Colorado State University were told.

Speaking to the dairymen was Dr. Tom Sutherland of the CSU animal science department, who summarized and evaluated the Greeley dairyman's experiment.

"Although Mr. Wiedeman's test definitely indicated negative results, a more critically controlled experiment is needed to explore the thyroprotein question more completely," Dr. Sutherland said.

Thyroprotein is a manufactured compound which steps up the metabolism rate when fed to animals. "When the compound is fed in large amounts, the thyroid gland stops producing its own metabolism-regulating hormone, hence withdrawal must be gradual," Dr. Sutherland said.

In conducting the test, Mr. Wiedeman divided his 100-cow herd into two equal size groups. Fifty cows were fed thyroprotein, 50 were not.

Cows getting thyroprotein also were fed an extra 10 lb. of grain per head per day to handle added nutritional requirements caused by the stepped-up metabolism rate.

Effect of feeding thyroprotein was most marked in first and third lactation cows. For example, first lactation cows in the treated group were producing around 120 lb. more milk and 6 lb. more fat per month than were first-lactation cows in the untreated group. In the first month of the experiment, these differences increased to more than 360 lb. of milk and 15 lb. fat per month.

"But the differences quickly became smaller in subsequent months," the report said. "By the third month, untreated cows were producing more than those getting thyroprotein.

"Considering cost of the extra 10 lb. of grain, plus cost of the thyroprotein itself, initial advantage from feeding the compound was not great," Dr. Sutherland said. "In later months the practice proved definitely unprofitable. Losses of $12 per cow per month were common and a few higher losses ranging from $20 to $40 per cow per month were recorded."

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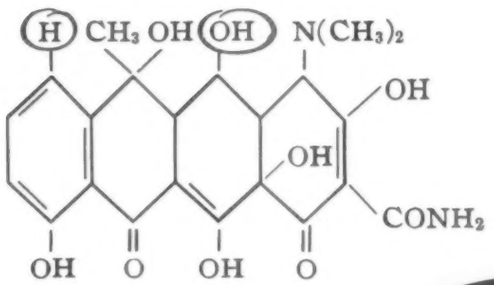

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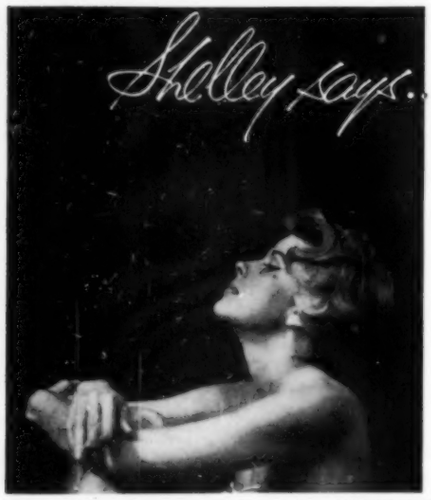

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Convention Calendar

May 4-6—Panhandle Grain & Feed Assn.; Herring Hotel, Amarillo, Texas.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-16 — National Cottonseed Products Assn.; Eden Roc Hotel, Miami Beach, Fla.; sec., John F. Moloney, 43 N. Cleveland St., Memphis 4.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 22—Des Moines Feed Club Field Day; Des Moines Golf and Country Club, Des Moines, Iowa; (hotel reservations) Reed Merrick, Sargent Calcium Co., 2525 Euclid Ave.; (tickets for banquet and show) Don Frantz, Nixon and Co., S.E. 21st and Maury.

May 22-23—Poultry Industry Sales Clinic; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

May 26—Oregon Beef Cattle Day; Oregon State University, Corvallis; chm., Dr. A. T. Ralston, Animal Husbandry Dept.

May 31—Iowa Cattle Feeders Day; Iowa State University, Ames; Dr. Wise Burroughs, Animal Husbandry Dept.

June 1-2 — Arizona Ranch School and Cattle Feeders Day; University of Arizona, Tucson; Dr. Bruce R. Taylor, head, Animal Science Dept.

June 4-6 — Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis 4.

June 5-7—Association of Southern Feed, Fertilizer and Pesticide Control Officials; Lafayette Hotel, Lexington, Ky.; sec., M. B. Rowe, 203 N. Governor St., Room 304, Richmond 19, Va.

June 8-11—Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hen-

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the columns in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

May 5—Arizona Poultry Industry Field Day; University of Arizona, Tucson; Dr. A. A. Kurnick, Poultry Science Dept.

May 6—Kansas Livestock Feeders Day; Kansas State University, Manhattan; Animal Husbandry Dept.

Sept. 22-23—Iowa Feed Conference; Memorial Union, Iowa State University, Ames; Dr. H. L. Self, Animal Husbandry Dept.

Oct. 16-17—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno, Cal.; co-sponsored by California Hay, Grain & Feed Dealers Assn. and University of California; chm., Dr. H. S. Wilgus, 2690 E. Foothill Blvd., Pasadena, Cal.

1962

March 21-23—Grain & Feed Dealers National Assn.; Denver-Hilton Hotel, Denver, Colo.; Secretaries Circle meetings March 19-20; sec., Herbert L. Sharp, 401 Folger Bldg., 725-15th St. N.W., Washington, D.C.

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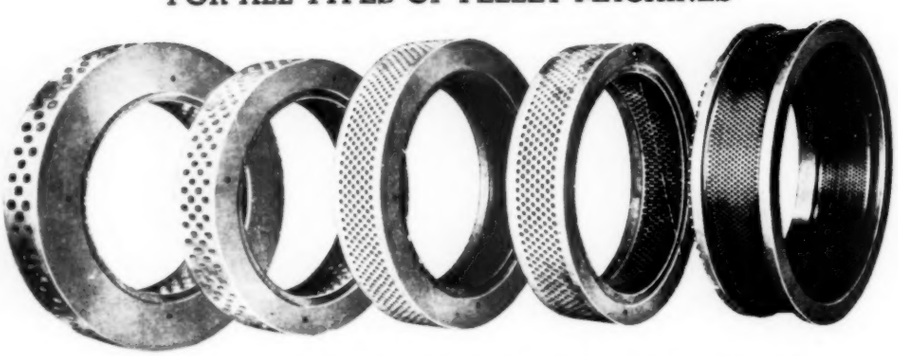

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drick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

June 9-10—Arkansas Poultry Festival; Little Rock; mgr., Arkansas Poultry Federation, John Haid, P.O. Box 1446, Little Rock.

June 11-14 — American Dairy Science Assn.; University of Wisconsin, Madison; chm., Dr. L. H. Schultz, dairy husbandman, University of Wisconsin.

June 12-13—Eastern Federation of Feed Merchants; Concord Hotel, Lake Kiamesha, N.Y.; sec., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 13-16—Northeastern Poultry Producers Council Egg Quality School; Pennsylvania State University, University Park, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

June 15-16—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Merrill Sather, 418 Peyton Bldg., Spokane 1.

June 15-17 — Delmarva Chicken Festival; Seaford, Del.; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

June 19—Connecticut Poultry Day Program and Exhibit; University of Connecticut; William A. Aho, Extension Poultryman.

June 19-21—American Association of Feed Microscopists Annual Meeting; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 19-24—Feed Microscopy Short Course, sponsored by American Association of Feed Microscopists; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 20-21—Alabama Poultry Industry Assn.; Whitley Hotel, Montgomery, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

June 29-30—Pennsylvania Poultry Federation; Pennsylvania State University, University Park; (room reservations) Russell Murphy; (program information) Glen O. Bressler, Room 105, Weaver Hall.

July 14-18—Georgia Feed Assn.; Grand Bahama Club, Grand Bahama Island; sec., W. E. Merritt, Suite 1-A. 361 E. Paces Ferry Rd. N.E., Atlanta 5.

July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

July 24-28 — Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

July 27—Technical Alfalfa Conference; co-sponsored by the American Dehydrators Assn. and USDA Western Utilization Research and Development Division; Western Regional Research Laboratory, USDA, Albany, Cal.; chm., Dr. G. O. Kohler, Chief, Division Field Crops Laboratory, Western Regional Research Laboratory, 800 Buchanan St., Albany 10.

Aug. 2-4—West Virginia Poultry Assn. Convention and Festival; Moorefield, W.Va.; sec., Wilson Smith, Petersburg.

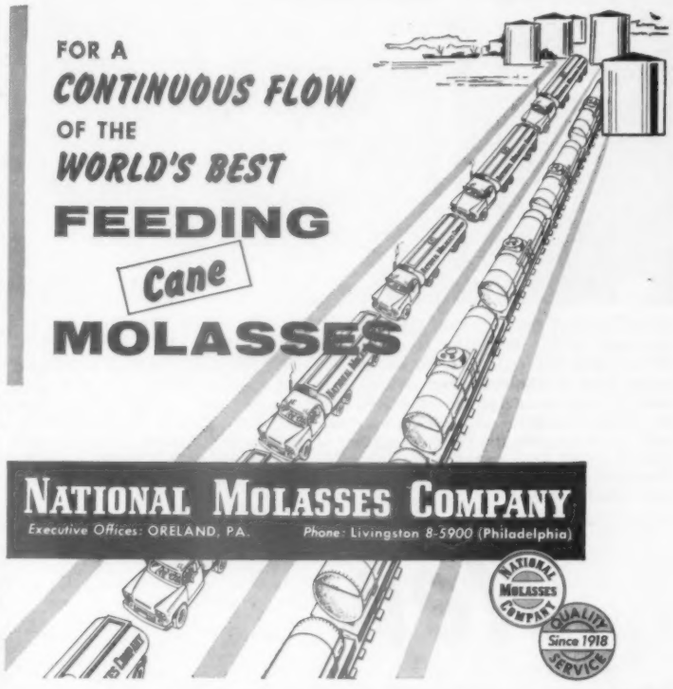
Aug. 3-4—National Soybean Processors Assn.; Edgewater Beach Hotel, Chicago, Ill.; sec., Wm. K. Self, 3818 Board of Trade Bldg., Chicago 4, Ill.

Aug. 7-9—Southeastern Management Roundtable; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce De Leon Ave., Decatur, Ga.

Aug. 7-12—Texas Feed Microscopy Short Course; Memorial Student Center, Texas A&M College, College Station; E. E. Brown, Station Microscopist.

Aug. 9 — Science at Work, Open House and Reports by Staff Scientists; Connecticut Experiment Station, Lockwood Farm, Mt. Carmel, Conn.

Aug. 13-18—School of Executive Development in Business Management, Unit II; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry &



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INGREDIENT RECEIVING OPERATIONS—Mrs. Drinka Mrkic gets an explanation of the ingredient receiving operations in the Kansas State University pilot feed mill from Robert W. Schoeff, extension specialist in formula feeds. John A. Shellenberger, left, head of K-State's department of flour and feed milling industries, escorted Mrs. Mrkic on her tour of the K-State feed technology facilities. A nutritionist from Belgrade, Yugoslavia, Mrs. Mrkic will be responsible for the formulation of feeds manufactured in a new feed mill of 70,000 tons annual capacity when she returns to her native country. Her three-week visit at K-State was sponsored by the International Cooperation Administration.

Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 21-22—Kentucky Feed & Grain Association; Brown-Suburban Hotel, Louisville, Ky.; sec., Jack Weber, Box 425, Lexington.

Aug. 24-26—North Carolina Feed Manufacturers Assn.; Cavalier Hotel, Virginia Beach, Va.; sec. McNair Evans, Box 428, Laurinburg, N.C.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; Dewey McNiece, Extension Poultry Dept., University of Georgia, Athens.

Aug. 28-29—American Soybean Assn.; Claypool Hotel, Indianapolis, Ind.; Geo. M. Strayer, Hudson, Iowa.

Sept. 11-12 — Minnesota Nutrition Conference; Institute of Agriculture, University of Minnesota, St. Paul; chm., Dr. L. E. Hanson, Animal Husbandry Dept.

Sept. 11-13—Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc., pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 13-14—Maryland Feed Service Conference; Chemistry Auditorium, University of Maryland, College Park; Wade H. Rice, Poultry Dept.

Sept. 18-19—Pet Food Institute; Drake Hotel, Chicago, Ill.; sec., Clyde Kassens, 333 N. Michigan Ave., Chicago 1.

Sept. 19-21—Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 19-27—International Conference on Fish in Nutrition; Washington, D.C.; sec., Dr. Erik Heen, Chief, Fisheries Technology Branch, Food and Agriculture Organization, Washington 25.

Sept. 24-26—Southeastern Feed Production School; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 Ponce De Leon Ave., Decatur, Ga.

Sept. 27-29—National Feed Ingredients Assn.; Lake Lawn Lodge, Delavan, Wis.; sec., I. Levin, 517½ E. Locust St., Des Moines 9, Iowa.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parke, P.O. Box 329, Ephrata, Pa.

Sept. 28-29 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; Dr. E. L. Stephenson, animal industry and veterinary science department.

Oct. 2-3—Washington Poultrymen's Institute; Centralia Junior College; Dr. Leo Jensen, Poultry Science Dept., Washington State University, Pullman.

Oct. 3-5—Northeastern Poultry Producers Council Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 10-11—Iowa Poultry Convention; Veteran Memorial Auditorium, Des Moines; sec., Iowa Poultry Assn., LeRoy Kruskop, 535 E. Lincoln Way, Ames, Iowa.

Oct. 15-20—School of Executive Development in Business Management, Unit III; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 Ponce De Leon Ave., Decatur, Ga.

Oct. 23-25 — Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 24-25—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19.

Oct. 26-28—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

Nov. 1—Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Dr. Philip Derse, Wisconsin Alumni Research Foundation, 506 Walnut St., Madison 5, Wis.

Nov. 1-2—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 1-3—Cornell Nutrition Conference; Statler Hilton Hotel, Buffalo, N.Y.; chm., Prof. Douglas E. Hogue, Animal Husbandry Dept., Wing Hall, Cornell University, Ithaca, N.Y.

Nov. 8-9—Illinois Feed Assn.-Illinois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

Dec. 6-7 — Missouri Poultry and American Poultry & Hatchery Federation Midwest Quickie Convention;

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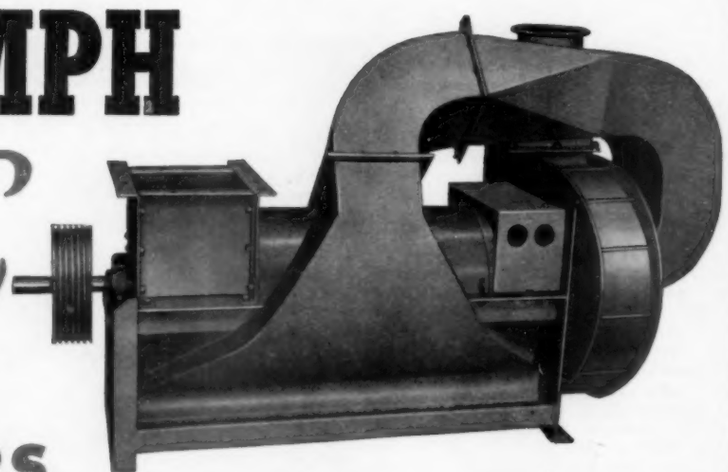

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The newly designed over-size cleaning unit extends the entire length of the shelling cylinder to provide thorough cleaning. Even the smallest particles of cobs and shucks are blown away. Two sets of the Triumph's exclusive curved comb bars control the movement of the corn through the cylinder, minimizing losses.

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Capacity (Machine Picked Ear Corn)	up to 750 Bu./Hr.*
Power Required	20—25 HP
Speed of Operation	900—1000 RPM
Diameter of Main Shaft	2 3/16"
Recommended Drive Service Factor	2
Overall Height	4'9½"
Height to Top of Hopper	2'11"
Overall Length	8'3¼"
Overall Width	3'2¾"
Weight Skidded for Domestic Shipment	1600 lbs.
Diameter Cob Piping Required	10"
Maximum Vertical Cob Pipe	50'
Maximum Horizontal Cob Pipe	50'

NOTE: No drive pulley supplied except on special order.

*Based on Standard Weight of 70 Lbs./Bu. Ear Corn.

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Hotel Continental, Kansas City, Mo.; sec., Missouri Poultry Improvement Assn., E. M. Funk, Box 568, Columbia, Mo.

Dec. 7-8—Michigan Feed and Grain Dealers Assn.; Pantland Hotel, Grand Rapids, Mich.; sec., Nevels Pearson, Box 472, East Lansing.

1962

Jan. 29-31—Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 4-6—Wyoming Grain, Feed & Seed Dealers Assn.; Townsend Hotel, Casper, Wyo.; sec., Everett L. Berry, Box 118, Sheridan, Wyo.

Feb. 5-7—Association of Southern Agricultural Workers; Jacksonville, Fla.

Feb. 9-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 67 E. Madison, Chicago 2, Ill.

Feb. 14-15—Pacific Northwest Feed Mill Production School; Benjamin Franklin Hotel, Seattle; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 16—Washington State Feed Assn., annual convention; Benjamin Franklin Hotel, Seattle; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 20-21—Virginia State Feed Convention and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; sec., Virginia State Feed Assn., J. Paul Williams, 615 E. Franklin St., Richmond 19, or Prof. Paul M. Reaves, Dairy Science Dept., Virginia Polytechnic Institute, Blacksburg.

April 9-10—National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

CCA Opens New Feed Mill at Cheraw, Colo.

CHERAW, COLO.—Consumers Cooperative Assn.'s new feed mill here opened recently with production of a batch of turkey grower concentrate.

"We intend to build a balanced tonnage out of the mill later on, but for the time being it will produce mainly for turkeys," said Hew Chandler, manager of CCA manufacturing plants.

The Cheraw mill, CCA's fifth, is manufacturing feed for farmers in southeastern Colorado, western Kansas, northeastern New Mexico and the panhandles of Oklahoma and Texas. These areas were formerly served by mills at Enid, Okla., and Muncie, Kansas.

The new mill's 105 ft. high tower is concrete and the warehouse is a Big Chief building from CCA's Hutchinson, Kansas, plant. The mill is 50 ft. wide and 196 ft. long. It has a production capacity of 20,000 tons of feed per year and a storage capacity of 500 tons of finished feeds and 150 tons of ingredients.

PROCESSING RESUMED

EAGLE GROVE, IOWA—Soybean processing has resumed at the Boone Valley Cooperative Processing Assn. soybean plant here following installation of new equipment, according to Keith Voigt, general manager. The soybean processing operation had been closed down several weeks while equipment doubling the plant's capacity was installed. Now rated at 400-tons-per-day capacity, it is expected that the plant can reach a 500-ton capacity, Mr. Voigt said.

Southern Control Officials to Meet in Lexington June 5-7

LEXINGTON, KY.—The Southern Association of Feed, Fertilizer & Pesticide Control Officials will meet June 5-7 in the Lafayette Hotel at Lexington, according to Bruce Poundstone, association president.

Registration will begin Sunday afternoon, June 4. There will be a meeting of control officials only, Sunday night and Monday morning. Registration will continue Monday morning.

Monday afternoon there will be a tour for everyone attending, including families. This will cover local industrial plants, some of the horse farms and historical sites in and around Lexington. The tour will terminate at Spindletop House where a buffet supper will be served. Penrose Ecton, well-known speaker from Lexington, will address the group.

The general session will begin Tuesday morning with the president's address followed by a panel discussion. Members of the panel will be: Paul T. Truitt, NPFI; W. E. Glennon, AFMA; J. A. Noone, NACA, and F. Dallas Sparre, MCA.

The panel will consider questions concerning the work of its respective associations, especially as it relates to the work of control officials. The afternoon session will be devoted to talks on animal nutrition and fertilizer manufacturing.

A barbecue dinner, followed by a folk music program, is scheduled at Keeneland race track Tuesday night.

The general session will continue Wednesday morning with talks on pesticide residues, what the various states and the federal government are doing regarding pesticides, and a discussion of the Hazardous Articles Law. The business session for the election of officers and other association business will conclude the meeting which will adjourn at noon.

Poultry Council Formed

WINNIPEG — Members of the Manitoba poultry industry from the producer to the distributor may now take coordinated action in solving the poultry industry's problems with the recent formation of an industry-wide poultry council, says J. Ross Cameron, poultry specialist with the Manitoba Department of Agriculture and Conservation.

Nine different groups representing producers, hatcherymen, feed manufacturers, processors and allied industries, are represented in the Manitoba Poultry Council.

IOWA MILL EXPANDS

ATLANTIC, IOWA — Challenge Feeds, Inc., here has expanded its facilities during the year. The feed mixing capacity of the mill has been doubled and is now capable of mixing 120 tons of feed in an eight hour day.

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NOW YOU CAN CLOSE THE SALE! Here's exciting new evidence that Morton T-M Salt puts gain on faster, at less cost! Your customers will be seeing this ad in SUCCESSFUL FARMING, FARM JOURNAL, FARM QUARTERLY, AMERICAN LIVESTOCK JOURNAL, NATIONAL LIVESTOCK PRODUCER; and leading state farm magazines. They'll remember it—be sure you remember it too! They'll appreciate your reminding them to take along Morton T-M Salt when they buy their feed, and they'll be back to do more business with you! Morton T-M Salt is a top-quality product you can recommend with confidence. What's more, it's up to thirty percent more profitable for you!

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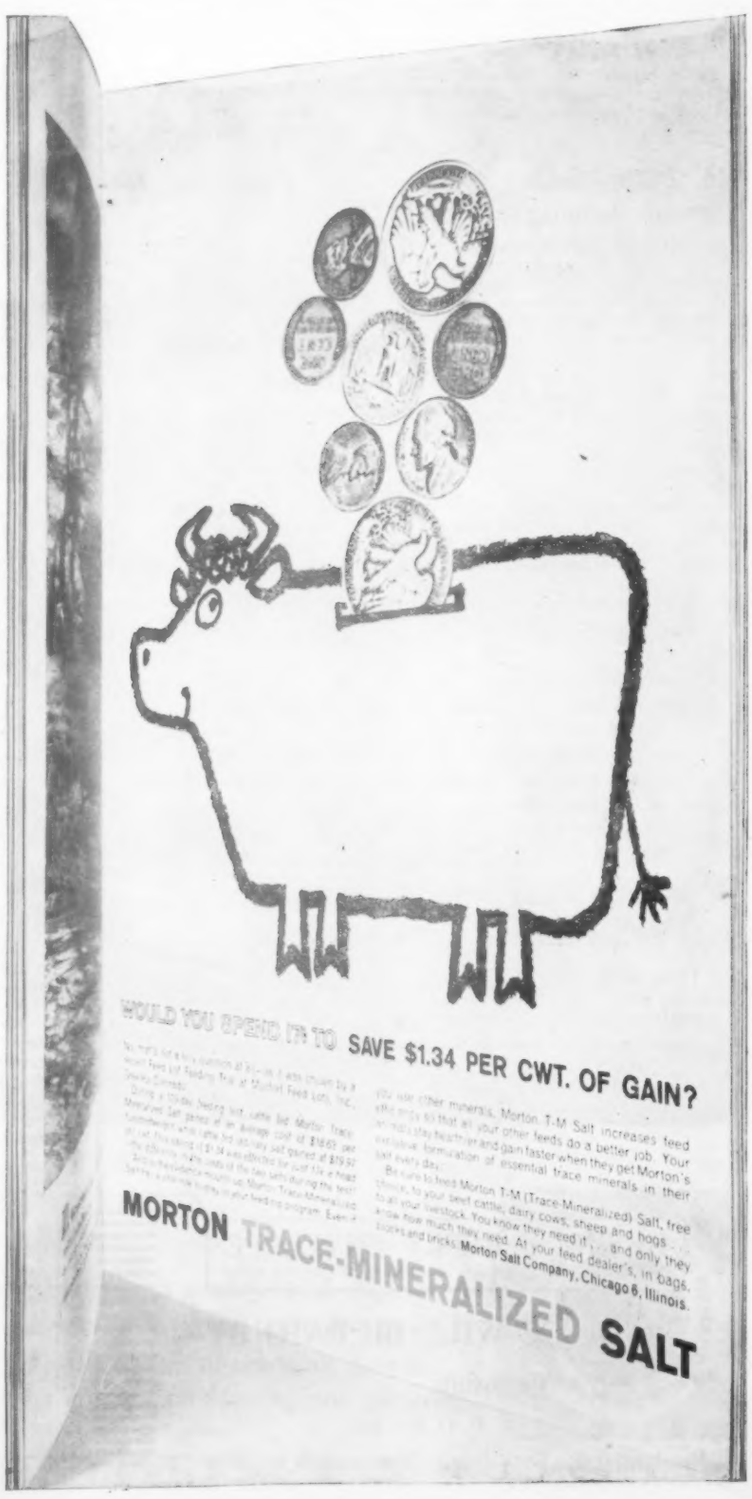

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DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7418—Dial Indicators

Literature is now available that describes the flexibility in design and utilization of Fairbanks-Morse cabinet dial and pillar indicators, according to announcement by Fairbanks-Morse & Co.

Features common to both types of dials are swivel head, easy-to-read chart and open-face, center indicating tare. Cutaway photos show the full-floating, double pendulum patented "Floaxial" mechanism.

For a copy of this literature entitled "Dial Indicators," Publication ASB 300.11, check No. 7418 on the coupon and mail.

No. 7428—Grain Storage Building

A new grain storage building with a capacity of approximately 1 million bushels has been announced by Armco Drainage & Metal Products, Inc.

The pre-engineered steel building is 120 ft. wide and its length can be varied in 20 ft. increments. To provide maximum storage capacity for grains with high angles of repose, the building has a 6:12 roof slope, which offers adequate space above grain for mounting conveyors.

Wheat and shelled corn, for example, can be filled to a height of 17 ft. on sidewalls and assume a 21-degree angle of repose. In this case, the peak of the grain is about 10 ft. below the building's ridge, providing adequate

room for conveyors. The building can store up to 2,750 bu. per foot of length.

Sidewalls of extra-strong 20-gauge Steelox panels are 20 ft. high. There are three fasteners in each foot of building length.

The roof is available in either Armco Aluminized steel or Zincgrip steel. Aluminized steel is said to reflect heat, maintaining cooler interiors and reducing aeration requirements.

Accessories include steel bulkheads, sliding doors, swing doors, roof ventilators and bin partitions. During off-seasons, the building is readily adaptable to other storage purposes.

For additional information, check No. 7428 on the coupon and mail.

No. 7431—Mobile Mill Bulletin

Methods of expanding or establishing a feed business by use of the Seco Mobile Feed Mill are described in two bulletins published by Seco, Inc.

Feed marketing, mechanical use of mobile equipment and general business management are outlined in the literature. The Seco "pushbutton" Mobile Feed Mill is described with full specifications.

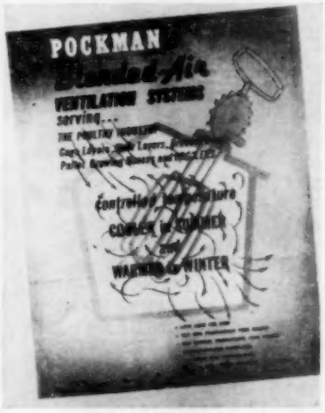
Seco Mobile Feed Mills are described as a complete feed processing plant on wheels—a 20 in. hammermill, multi-action mixer, molasses blender, concentrate feeder, weighing device and a combination bagging and bulk unloading system. The units are equipped with electric "pushbutton" controls and powered by a 120 h.p. diesel power unit.

These bulletins may be obtained by checking No. 7431 on the coupon and mailing.

No. 7432—Poultry House Ventilation

Literature describing the use of a controlled temperature system for cage layer, floor layer and broiler houses, has been released by the L. A. Pockman Mfg. Co.

The literature describes how the



company's Blended-Air Ventilation System keeps poultry houses cooler in summer and warmer in winter by automatically controlled environmental conditions inside the house regardless of outside weather.

To obtain this literature, check No. 7432 on the coupon and mail.

No. 7435—Drop Bottom Mixer

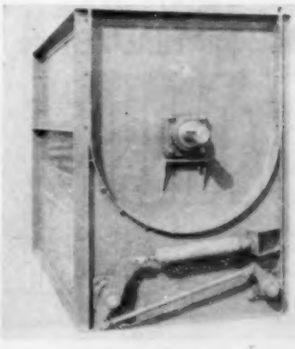
The availability of a new and improved drop bottom mixer has been announced by Hayes & Stolz Industrial Manufacturing Co., Inc.

Vernon Hayes, company president, describes the mixer as "superior in construction and design." He says that it "is ideal for pre-mixing feeds, foodstuffs, chemicals, fertilizer and seed. And it's a completely enclosed and leak-proof unit assuring efficient, non-contaminating and trouble-free operation."

The drop bottom doors are operated by air cyclinders and equipped with an automatic locking arrangement, assuring locked doors during the mixing cycle. It is available in stainless steel and in sizes through 2-ton capacity.

The new mixer will be displayed at the National Feed Show in Chicago.

For additional information, check No. 7435 on the coupon and mail.



No. 7434—Roller Mill

The Mooers Manufacturing Co. has made available a grain roller mill as a standard accessory to its mobile feed plant.

The rolls are 9 in. in diameter by 28 in. long. Capacities range up to 1,000 bu. per hour on cracked corn, 200 bu.

per hour on oats and 400 bu. per hour on barley.

A 26 in. Stearns magnet in the hopper eliminates the danger of "tramp" iron in the feed, officials state. The grain can be conveyed into the mixer for adding supplement and molasses or by-pass the mixer directly to the unloading auger. The roller mill can also be installed on all older Mooers machines.

For additional information, check No. 7434 on the coupon and mail.

No. 7426—Motor Couplings Folder

A new six-page Folder 2975, "Type MC Geared Flexible Motor Couplings," is now available from Link-Belt Co.

The new publication brings together all data on Link-Belt motor couplings including three new features: a new cover that is said to have exceptional resistance to acids, alkalines and solvents for applications that subject couplings to chemical attack; a new spacer adapter that speeds and eases maintenance of coupling, driven pumps and compressors by permitting installation with an access gap between shaft ends;

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Vibrator noise is sometimes objectionable, especially when vibrators are used in close proximity to personnel for extended periods.

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The RC's are electric and operate on a rotating eccentric weight principle. They are an enclosed electric motor with rotating, cam-like weights on each end. The RC's make no more noise than a standard motor.

The AC's are similar to standard Cleveland Vibrators, except that the piston stroke is cushioned by a pocket of air. While noise is not eliminated, it is reduced to an unobjectionable level.

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- ☐ No. 7431—Mobile Mill Bulletin
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and a larger size added to the line that now extends application range of the couplings to a 2⅞ in. bore size.

The MC couplings described in the new folder are designed specifically for use as motor couplings for transmitting power to pumps, compressors, generators, speed reducers and similar applications. Packaged components, finished and ready for use, permit "off the shelf" delivery from Link-Belt distributors, zone warehouses and plants.

For additional information, check No. 7426 on the coupon and mail.

No. 7430—Liquid Floor Coating

A liquid floor coating for concrete floors that brushes on like paint, yet dries overnight to a tough surface that is said to prevent wear, spalling or dusting, has been introduced under the trade name "Chem-Cote," by the Garland Co.

Described as four times harder than concrete itself, Chem-Cote—a catalyst-hardened, reinforced copolymer—fills and levels small holes, hairline cracks, chips, and slightly spalled interior concrete floors, terminating major repair.

Company officials say that Chem-Cote will dry in a matter of hours

to a crack-free uniform surface that resists abrasive action and prevents troublesome dusting. It will withstand light truck traffic after overnight drying.

Chem-Cote can be mixed with paint, poured on the floor and brushed smooth. One application of Chem-Cote levels out to form a tough plate approximately 1/32 in. thick, that will withstand the heaviest steel-wheel trucking.

The new coating expands and contracts with the floor, has many times the compressive and tensile strength of concrete, and can carry heavy loads without rutting or grooving, and resists thermal shock with no loss of its properties, company officials state.

It is said that Chem-Cote can be brushed directly on to any clean, dry, basically sound floor, and will adhere rigidly without a bonding or slush coat. It is available in four standard industrial colors—cement gray, dark gray, forest green and tile red.

For additional information, check No. 7430 on the coupon and mail.

No. 7429—Multi-Purpose Spreader

Announcement of the "Hawkeye" Convertible, a lime and fertilizer spreader, which is also a multi-purpose unit adaptable for a flat bed truck, self-unloading grain box or dump body, has been made by the Iowa Portable Mill Co.

The spreader has a capacity of 7 tons for fertilizer or 9 tons for lime. Its pattern is 24 ft. with hoods and 42 ft. without the hoods. Body size of the hopper is 144 in. long by 43¾ in. high by 78 in. wide.

A 16½ in. center conveyor chain carries the fertilizer to the rear of the truck. Dual spinners, which are easily removed, spread the fertilizer in an even pattern. The feed gate opening is controlled by an accurately graduated gear and track mechanism.

The company says that a ruggedly built truck bed will carry any of

these bodies. A ½-ton hoist and overhead support will remove the hopper from the flat bed of the truck.

For additional information, check No. 7429 on the coupon and mail.

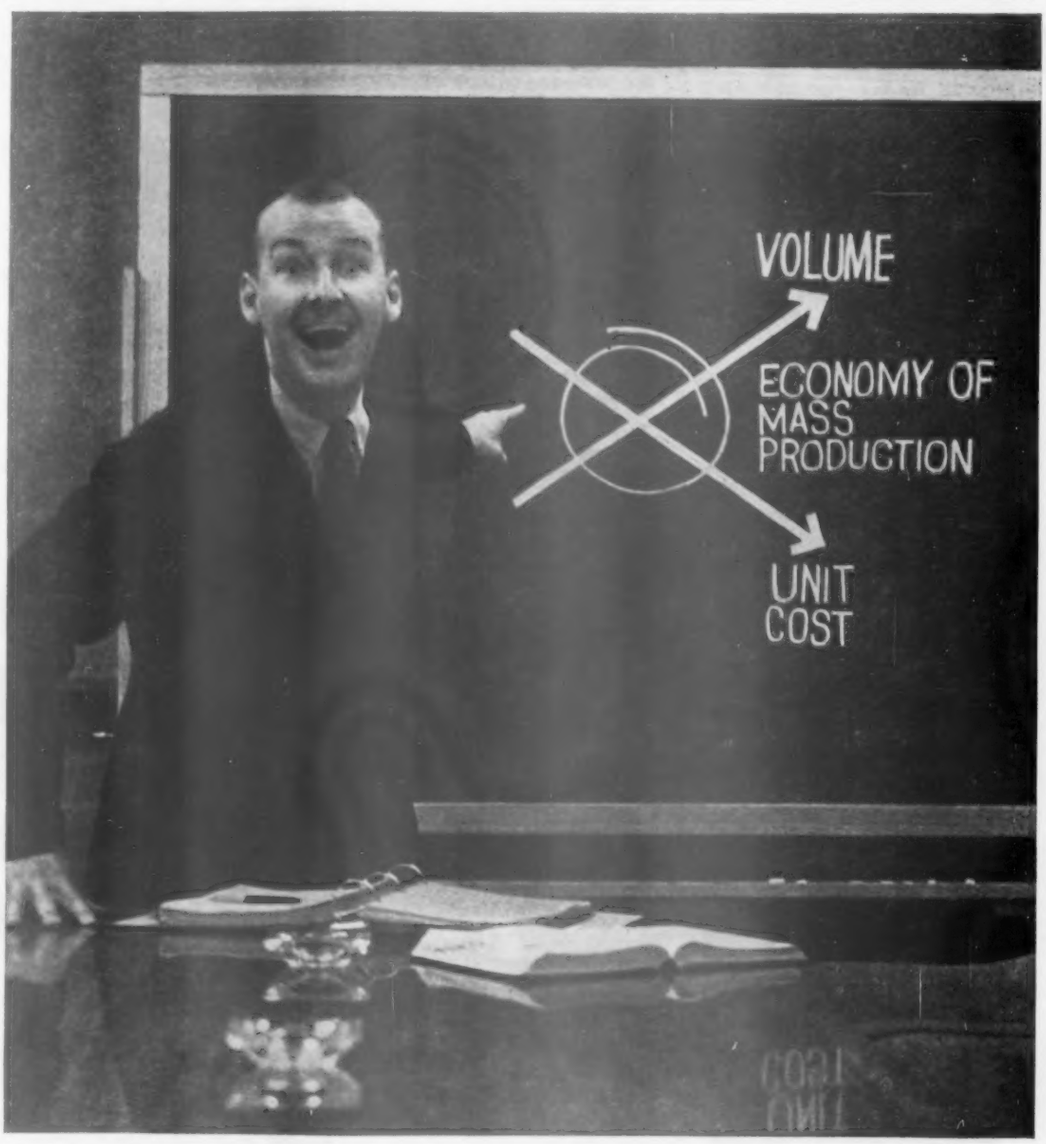
No. 7427—Plant Safety Kit

An illustrated plant safety kit designed to make fork lift operators more efficient and safety conscious in their materials handling work is available from Towmotor Corp.

The Towmotor safety kit contains a pocket-sized lift truck operator's guide, four humorous safety cartoons for posting on plant bulletin boards and four lift truck route posters printed in bold letters. These posters are said to attract attention with their messages of caution on narrow aisles, blind corners, dangerous crossings and low headroom areas.

The operator's guide outlines basic operating data for Towmotor Fork Lift Trucks and accessories in simple, easy to read terms. The guide also illustrates proper handling techniques for lifting, transporting and stacking the various types of loads—techniques designed to prevent careless operation, help lift truck operators avoid costly accidents, eliminate worker injuries and product damage.

The operator's guide includes a 30-point safety check list containing courtesy rules, traffic control tips and common sense safety precautions. A 32-point preventive maintenance check list discusses such topics as cutting plant downtime, trouble-free materials handling operation and how



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to get maximum service from Towmotor equipment.

Free copies of this safety kit can be had by checking No. 7427 on the coupon and mailing.

No. 7433—Belt Conveyor

Finco, Inc., has announced development of a new, lightweight line of expandable, natural-troughing, self-cleaning belt conveyors that are said to provide high-capacity, low-cost conveying.

Tie-rod, bolted construction permits the conveyors to expand from 6 ft. to 65 ft. in length, and from 6 in. to

24 in. in width. The troughs are approximately 2 in. deep.

Special conveyor sides prevent material from lodging under belt, and its self-cleaning features are said to insure steady movement without pile-up.

Crowned face steel and tail pulleys (head pulleys lagged), heavy-duty belts, heavy-duty chain and belt guards and other quality components are used throughout, says the company.

For additional information, check No. 7433 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7373—Equipment for poultry, livestock, Fulton Co.

No. 7374—Portable belt conveyor, Finco, Inc.

No. 7375—Adjustable elbow, Huss & Schlieper.

No. 7376—Humidity guide, Seedburo Equipment Co.

No. 7377—Bale shredder, Jacobson Machine Works, Inc.

No. 7378—Equipment leasing study, Foundation for Management Research.

No. 7379—Weigh hopper for vertical mixers, Sprout, Waldron & Co., Inc.

No. 7380—Bulk feed body, FMC Bulk Transport Systems.

No. 7381—Bag top printer, Bemis Bro. Bag Co.

No. 7382—Bloat control treatment, Dr. Roberts Laboratories and Nicholas of America, Ltd.

No. 7383—Vibratory feeder, Eriez Manufacturing Co.

No. 7384—Poultry medication, The Merck Chemical Division of Merck & Co., Inc.

No. 7385—Nutrient level card, Peter Hand Foundation.

No. 7386—Displacement blower, Sutorbilt Corp.

No. 7387—Hanging feeder, Oakes Manufacturing Co.

No. 7388—Feed computer, Nutrena Feeds.

No. 7389—Insecticide, Dr. Salsbury's Laboratories.

No. 7390—Bag-type container, West Virginia Pulp & Paper Co.

No. 7391—Air conveying systems, Sprout, Waldron & Co., Inc.

No. 7392—Automatic hog feeding systems, Hawkeye Steel Products, Inc.

No. 7393—Hanging hopper for weighing, The Ferguson-Hanks Corp.

No. 7394—Bolted steel storage bins, Finco, Inc.

No. 7395—Antibiotics for swine, Merck & Co.

No. 7396—Turntable palletizing system, Standard Conveyor Co.

No. 7397—Collection of past-due accounts, U.S. Collection Assn.

No. 7398—Ventilating fan for poultry houses, Keen Manufacturing Corp.

No. 7399—Carload grain hopper scale, Cardinal Scale and Manufacturing Co.

No. 7400—All - purpose blender, Thomas Conveyor Co.

No. 7401—Sedimentation test kit, Seedburo Equipment Co.

No. 7402—Rear roll-out nests, the Fulton Co.

No. 7403—Control level switch, Hawkeye Steel Products, Inc.

No. 7404—Twin screw feedmobile mixer, Daffin Manufacturing Division, Daffin Corp.

No. 7405—Dehy comparison booklet, the National Alfalfa Dehydrating & Milling Co.

No. 7406—Caged layer folder, Babcock Poultry Farm, Inc.

No. 7407—Dual systems for mobile mills, Barnard & Leas Mfg. Co., Inc.

No. 7408—Antibiotic water medication, Dr. Salsbury's Laboratories.

No. 7409—Circular bunk feeder, Wyatt Manufacturing Co.

No. 7410—Filter Cleaning Service, Day Sales Co.

No. 7411—Molasses feed mixer, Sprout, Waldron & Co., Inc.

No. 7412—New grain equipment line, the Dempster Mill Manufacturing Co.

No. 7413—Hog feeder, Hawkeye Steel Products, Inc.

No. 7414—Bin flow device, Bin-Dicator Co.

No. 7415—Corn sheller, C. O. Bartlett & Snow Co.

No. 7416—Coccidiosis booklet, Dr. Salsbury's Laboratory.

No. 7417—Portable pneumatic unit, Fuller Co.

No. 7419—Equipment leasing, financing, Seedburo Equipment Co.

No. 7420—Screw conveyor torque, Sioux Products.

No. 7421—Mobile pelleting unit, Daffin Mfg. Division, Daffin Corporation.

No. 7422—Feed weighing truck, Conveyor Co.

No. 7423—Batch mixer, H. C. Davis Sons' Manufacturing Co.

No. 7424—Pallet bins, Simpson Lumber Co.

No. 7425—Feed flavoring, Flavor Corp. of America.

To Review Livestock Tests at Kansas State Feeder Event May 6

MANHATTAN, KANSAS — Reviews of experiments during the past year by members of the Kansas State University animal husbandry staff and a panel discussion will highlight the 48th annual livestock feeders' day program May 6 in Manhattan.

A prominent West Coast feedlot operator, Harvey McDougal, Collinsville, Cal., is to give a talk on beef making in the San Joaquin Valley and is to be on an afternoon panel with four Kansas stockmen and two representatives of livestock markets. Using harvested forages and grass is the topic to be discussed.

The representatives of the Kansas City and St. Joseph markets are to discuss the purchasing and selling of cattle that have been fed either bulky or highly concentrated rations.

Experimental cattle will be on exhibit in the animal industries building arena from 8 to 10 a.m. Reviewing of their experimental work by the K-State staff members is to start at 10 o'clock.

Experiments to be reported include those on grazing and grass management; pasture burning, deferred and long-season grazing; bonemeal, copper, cobalt and Aureomycin for steers on pasture; salt-protein blocks versus salt-protein mixtures for calves on winter pasture; enzyme preparations for calves on wintering rations; dehydrated alfalfa versus vitamin A with and without Aureomycin; artificially dried corn for cattle; comparative value of four varieties of forage sorghum silage for wintering calves; tranquilizers for controlling shipping fever and shrink in stocker calves; the value of concrete lots and shelter for wintering steers, and pelleting forage sorghums. Others pertain to quality meats, sheep and swine production.

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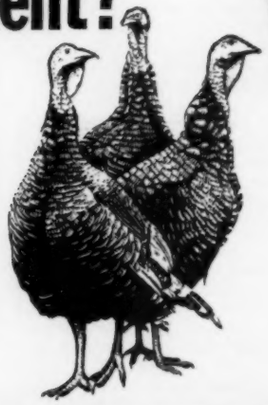

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To Present Mill Designs at Production School

KANSAS CITY—Plant layouts for different sizes and types of feed milling operations will be presented at the 1961 Feed Production School, to be held Sept. 11-13 at the Hotel Continental in Kansas City.

Layouts for three mill sizes are now being completed by the school's plant layout and design committee, headed by T. E. Stivers of the T. E. Stivers Co., milling engineering firm, Decatur, Ga.

The layout and design material, expected to be of widespread industry interest, will be for these mill sizes: (1) 100-200 tons per eight-hour day; (2) 75-100 tons per eight hours; (3) 25-75 tons per eight hours.

Mr. Stivers said that all of the mill designs will incorporate the best available modern equipment that can be justified in keeping with practical costs and pay-off rates based on reasonable running time. The layouts will be based on information and specifications provided by other Production School committees, including definitions, research, education, process flow and equipment standards committees.

The layouts will be presented at the school in simultaneous sessions, according to mill size. In addition, each student can attend special sessions on quality control, materials handling, production records, etc., during other periods.

Layout, Design Information

Here is an explanation of the layout and design information:

(1) 100 to 200 Tons—The largest mill size, 100-200 tons per eight-hour shift, will be a complete feed, all-purpose commercial mill. Bernard J. Lattyak, director of manufacturing and engineering for Hales & Hunter Co., Chicago, is in charge of this layout, which will be a horizontal-batch type system. It will include bulk storage in and out, equipment for handling liquids, plus pelleting and automatic bagging.

(2) 75 to 100 Tons—This is also a commercial mash and pellet plant. It will bring a different approach in arrangement and materials handling. W. B. (Bill) Briggs, manager of properties for Norris Grain Co., is handling the design. Mr. Briggs, for several years, was chief engineer for Spartan Grain & Mill Co., and prior to that was in the milling engineering department of The Quaker Oats Co.

(3) 25 to 75 Tons—This layout, for the smallest plant, will be arranged for two options. One choice would provide for rail bulk or bag incoming, and truck bulk or bag out. The other choice would be truck only, in and out, bulk and bag. Either or both options could be used in final design. In both cases the mill would use purchased concentrates or premixes, blending with local grain. There will also be custom grinding and mixing provisions in both. Pelleting will be optional in either plant. These layouts will be prepared by Mr. Stivers, the committee chairman.

TRAINING SCHOOL—The 25 men pictured here attended a dealer training school at the Hubbard Milling Co. research farm at Mankato, Minn. Feeding and management programs for livestock and poultry were covered by personnel from the Hubbard research and sales departments.

Front row, left to right: Maurice Zimmer, Clements, Minn.; Vern Swenson, Wells, Minn.; Rudy Borntrager, Topeka, Ind.; Marlen Malingen, Pelican Rapids, Minn.; David Jansen, Olivia, Minn.; David Wolff, London, Minn., and Howard Horn, Mentone, Ind.

Middle row, left to right: Henry Haas, Humboldt, Iowa; Kenneth Shepiee, Huntley, Minn.; John DeKraai, and J. A. Johnson, Brookings, S.D.; Paul Heckaman, Bremen, Ind.; P. M. Brandt, North Redwood, Minn.; Everett Schlenner, Wood Lake, Minn.

Back row, left to right: Charles McMahon, Delavan, Minn.; Ronald Miller, Wells, Minn.; Gaylord Shaffer, Webster, Minn.; Owen Hecht, Lakefield, Minn.; Glenn Engelkin, Sargeant, Minn.; Bill Gibson, Beardsley, Minn.; Bill Schulz, Appleton, Minn.; Alvin Peterson, Sioux Falls, S.D.; Ted Johnson, Welton, Iowa; Bud Fischer, Durant, Iowa; Maynard Olson, St. James, Minn.

Plan Iowa Structure

DAVENPORT, IOWA — Construction of a $300,000 manufacturing and warehouse building is under way here for the Long Manufacturing Co. The building will be 100 by 500 ft. and officials are hopeful of beginning production in June. Nearly $150,000 has been invested in land and equipment.

It is reported that the firm was prompted to move to Davenport to be nearer the market for its grain handling equipment. The plant is located on a 14-acre plot.

The firm makes and markets 14 items, but only grain bins, dryers and handling equipment will be made and distributed from the Davenport plant.

NEW IOWA FIRM

LYTTON, IOWA—Open house was held here recently for Lytton's new business, the Lytton Milling & Supply Co. The business will be a complete feed and seed outlet with an animal health department in addition to mobile milling service.

Test after test proves Smith-Douglass CDP and DIKAL to be the MOST CONSISTENT feed phosphorus supplements. Sample after sample . . . month after month . . . from bag and bulk shipments . . . in feed mills throughout the country . . . analyze the same consistent analysis.

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	Phosphorus	Calcium	Fluorine
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	Screen analysis: All through 14 mesh; 80% on 200 mesh, plus or minus 5%.		
DIKAL	18.5% min.	20.0% min. 23.0% max.	0.12% max.
	Screen analysis: All through 20 mesh; 80% to 90% on 200 mesh.		

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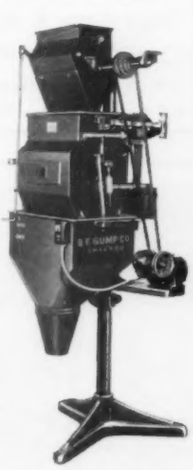

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Chick Chats
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Chick Master

Pace Setter in the field of MODERN INCUBATION

CHICK MASTER INCUBATOR CO.
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List Poultry Vitamin Recommendations

Recommendations on vitamin levels in poultry rations were presented at the 1961 Oregon Nutrition Conference.

As part of a presentation on "Vitamins in Poultry Nutrition," Dr. H. S. Wilgus of The Ray Ewing Co. offered recommendations which he said are in accord with general commercial practice in his experience.

In his talk, Dr. Wilgus noted that there still are huge gaps in knowledge in the practical as well as fundamental fields of vitamin research. Also, he noted that nutrition authorities are not in agreement as to desirable levels of vitamins to use in practical rations, despite all the research on vitamin requirements.

"This situation places the commercial nutritionist in a tough spot," Dr. Wilgus observed. "Such practitioners in nutrition are legion in number, full of facts and doubts, wary by experience, responsible for everything that goes wrong with the animals, usually overworked by associated responsibilities in purchasing, production, sales and service, and thoroughly bedeviled by demands for ever-better feeds at ever-lower costs. They are usually psychologically conditioned to avoid any changes, if possible, within economic limitations. College nutritionists rarely attain this frantic status, since they are rarely under such stresses. Hence, they usually take a logical and saner approach, but often a less practical one. The nutrition practitioner always has in mind a variety of these 'individual conditions,' each one supported by some data, by more or less practical experience, by grapevine information, and by apparent logic or analogy."

Dr. Wilgus went on to discuss some of the major areas influencing "conditions" or prejudices. These included such things as lack of accurate data on requirements, nutrient inter-relationships, effects of "stresses" on requirements, variations in vitamin content of ingredients, destructive influences in feed, factors affecting availability, variations in mixing accuracy and deviations from recommended feeding directions.

"How can commercial nutritionists arrive at reasonable margins of safety when such problems and doubts constantly assail them?", Dr. Wilgus asked. "Actually, this list consists chiefly of an enumeration of some of the multitudinous areas requiring further intensive research. But the show must go on, and so it does with remarkably excellent results."

The constant decline in vitamin prices permits the nutritionist to provide rather high margins of safety at a relatively minor cost today, the speaker pointed out. Dr. Wilgus said he has gradually adopted the viewpoint of adding vitamins of known potency and full biological availability to rations to provide by themselves approximately the NRC requirements. These additions are supplied above the amounts occurring naturally in feed ingredients. In some cases, however, even greater amounts are suggested on the basis of general successful usage.

Dr. Wilgus continued:

"The recommendations given in the accompanying table are in accord with general commercial practice in the author's experience They are in good agreement with those of some of the leading college nutritionists in commercial production areas. In computing average calculated analyses of rations, one generally uses a table of average analysis of feed ingredients based on the various reports of the National Research Council. By comparison of such computations for vitamin A activity, riboflavin, pantothenic acid, niacin and choline present in the natural ingredients in a formula with the recommended levels given in the table, the amount of each of these vitamins to be added for a particular ration can be obtained with some exception. A dry, stabilized, gelatin-coated vitamin A palmitate should always be added to provide at least NRC requirements for vitamin A. Calculations are not made in normal routine for vitamins B_{12}, D, E, and K, thiamine and folic acid. These are added in the amounts desired for protection and for 'insurance.' Eventually, there may be some reason to add biotin and pyridoxine when more research information becomes available. Current limited data indicate that the amounts supplied in natural ingredients may at times be borderline in some cases but this requires further verification.

"In summation, many areas of twilight and darkness still exist in regard to vitamin levels for poultry feeds. Each nutritionist must arrive at what he feels are adequate margins of safety for practical rations under his conditions of use. Generous margins of safety can be achieved relatively economically at present vitamin prices. The recommended levels for various poultry rations as presented are quite representative of those in general successful usage."

Recommended Vitamin Levels per Pound of Ration

	CHICKENS				
	Broilers	0-8 wk.	8-18 wk.	Layers	Breeders
M.E., Therms	1.4	1.3	1.2	1.3	1.3
Vitamin A, U.S.P.U.	4,000	3,000	3,000	4,500	5,000
Vitamin D_3, I.C.U.	400	400	300	500	500
Vitamin E, Int. U.*	1	1	1	1	1
Menadione SBC, mg.*	1	1	1	0.5	1
Riboflavin, mg.	3	2.5	2	1.5	2.5
Niacin, mg.	25	20	15	15	20
Panto. acid, mg.	7	6	5	4.5	6
Choline, mg.	700	700	500	550	550
Vitamin B_{12}, mcg.	5	5	2	2	4

*Added beyond that naturally present in usual feed ingredients.

	TURKEYS				
	0-6 wk.	6-12 wk.	12-18 wk.	18 wk.-mkt.	Breeders
M.E. Therms	850	900	900	950	1,200
Vitamin A, U.S.P.U.	5,000	5,000	5,000	4,000	6,000
Vitamin D_3, I.C.U.	800	800	700	600	800
Vitamin E, Int. U.*	5	5	4	2.5	10–15
Menadione SBC, mg.*	1	1	0.5	0.3	1
Riboflavin, mg.	3	3	2.5	2.0	3
Niacin, mg.	35	35	25	22	25
Panto. acid, mg.	7	7	6	5.5	9
Choline, mg.	900	850	750	600	600
Vitamin B_{12}, mcg.*	5	5	3	2.5	5

*Added beyond that naturally present in usual feed ingredients.

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50TH ANNIVERSARY

MARSHALLTOWN, IOWA — The Doyen Co. celebrated its 50th anniversary by holding open house at its new offices here. The new building also houses warehouses of the firm, chief products of which are flour and feed.

Q. What carrier protects vitamin A without sacrificing digestibility?

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Massachusetts Feed Man Offers Management Tips for Egg Profits

By Charles L. Stratton
Feedstuffs Special Writer

When Peter P. Umpa, an independent feed manufacturer-broker of Andover, Mass., visits a customer's farm, he gives the laying flock a good going over—profitwise.

"Service is my business," he says. "Today's medication and nutrition advances have eliminated 90% of a grower's problems. Poultry strains are continually being improved. Everything is more effective. If growers improved their management it would eliminate a lot of problems.

"I try to steer market egg producers right regarding ventilation, medication, lighting and equipment. Frankly, if a customer makes money, he pays his bills. If he doesn't, we're all losers."

Mr. Umpa's Check Sheet

Mr. Umpa lists the following when checking a table egg flock: (1) Feed consumption, (2) egg production, (3) general health, (4) management practices, (5) outward signs of respiratory, (6) worms, and (7) any disease in general.

He never smokes in a poultry building. "It's a safety measure," he says. "Dry litter and dust are dangerous. Quite often ammonia fumes make it difficult to smoke anyway."

The next step is to disinfect the footwear. He points out that all flock owners should have a pan of disinfectant in the feedroom and use it when going between different buildings and birds of various ages.

He checks feed consumption records to see if birds are eating according to their age. "If feed consumption is dropping it usually signifies the flock is coming down with a disease problem."

Egg baskets are checked. He recommends using rubber or plastic covered wire baskets. No old pails or coal hods.

He doesn't even sniff for ammonia fumes. "If it's there," he says, "it'll burn the eyes. Don't understimate this condition. The air smells bad and it's suffocating. It can get so bad it will blind the birds and they will suffer a loss of appetite. The birds and your profit will suffer."

Mr. Umpa looks into grower complaints regarding shell texture or too many medium eggs. "If there are too many mediums according to the age of the birds," he explains, "it could be the feed or something else. Check into it. If it's a brown egg bird and the eggs are white, it indicates there's something wrong with the birds . . . bronchitis . . . Newcastle."

In one instance where a producer was getting too many mediums, Mr. Umpa advocated installing more waterers which brought up the egg size.

One equipment problem is the use of obsolete mechanical feeders. Checking the litter under the feeder track at one farm he found it mostly feed. "They'd save money if they bought a new machine," he said. "They're using too much feed. Instead of going into the birds, it's going into the litter."

Post Mortems

Mr. Umpa is equipped for on-the-spot post-mortems, carrying a compact little pocket kit complete with tweezers, knife, scissors, etc., with microscope and coveralls in the car. He has performed many feedroom post-mortems to save the customer's time.

He also draws on his business experience and knowledge of the industry to advise a flock owner in setting up a farm on a financial basis, how to meet market trends, egg care and, if necessary, helps him find a suitable market.

Mr. Umpa visits poultry farms every day and finds management is the biggest problem. "Improve your management and help yourself to a bigger income," he says, as he makes his rounds helping market egg producers correct and improve their management practices.

POST-MORTEM—A compact pocket kit for on-the-spot post-mortems of laying hens is displayed here by Peter Umpa, independent feed manufacturer-broker of Essex County, Massachusetts. He has performed many feedroom post-mortems to save customer's time.

SUGGESTIONS FOR MORE PROFIT—Peter Umpa, center, independent feed manufacturer-broker of Essex County, Mass., checks egg quality with Mr. and Mrs. Norman Derosier. Mr. Umpa helps solve grower complaints regarding shell texture and too many small eggs.

Changes Continue, But—

'Feed Business Future Just As Bright As the Future of Animal Agriculture'

By Special Correspondent

LAFAYETTE, IND. — What's the future of the formula feed business? "The future is just as bright as the future of animal agriculture," said Dr. L. A. Wilhelm, director of poultry development and market research, The Quaker Oats Co., Chicago.

Dr. Wilhelm was one of several speakers at the National Institute of Animal Agriculture at Purdue University who covered topics of interest and importance to feed men. (Also see story in Feedstuffs April 8 and reviews of other talks below.)

"We recognize," Dr. Wilhelm said, "that there will be more competition from new marketing co-ops, on-the-farm mixing and ground-up operations on the part of the large operators.

"The formula feed business stakes its future in animal agriculture by providing to its customers:

"(1) Value in high returns per dollar spent.

"(2) Quality based on years of research and experience.

"(3) Variety in needs—meal, pellets, crumbles.

"(4) Added fats and molasses.

"(5) Bulk handling.

"(6) Credit and financing.

"(7) Grain bank service.

"(8) End product marketing.

"(9) Know-how in feeding, management and disease prevention.

"(10) Integrity."

The industry is aware its business is changing, he said, pointing out that "we know that we lost 19% of our potential customers in the last five years. This trend may be epitomized by broiler farms—17% fewer but production up 78%, or turkey farms, which decreased 48.9% in five years while production increased 32%.

"The feed business even understands that its primary customers are the 150,000 'blue chip' performers—those with sales above $25,000 per year."

More Concentrates

To cut costs, utilize more locally produced grains and to get greater flexibility in adding medications, antibiotics and other treatments, more and more of animal agriculture is buying concentrates and making complete feeds nearer to the feed lot and poultry farm, Dr. Wilhelm observed.

A study by the National Egg Council indicated, Dr. Wilhelm asserted, that an increasing percentage of egg producers are not buying through feed dealers. Furthermore, one-fourth of them are making their own feed either from concentrates or (3.4%) from the ground up, the study showed.

Animal agriculture is making increased use of complete feeds—even though the use of concentrates is expanding faster, he asserted. . . . A chicken can digest a whole kernel of corn or a hog eat it off the cob, but as the battle of increased labor, time and feed efficiency is being fought out in hard cash, it simply takes less feed, less labor, less man hours, with a properly ground feed.

More Livestock Feed

Increases in poultry and swine feeds have contributed to the record of expansion in tons of feed manufactured, Dr. Wilhelm said. However, there is not too much more expansion in poultry feeds, percentagewise. Hog feeds hold considerable promise, he said, as well as for those of our "double stomach" friends.

Dr. Wilhelm cited results of an Illinois study of swine feeding practices to show opportunities in the hog business. The use of a completely ground feed for part of the time and corn and supplement the rest of the fattening period led other programs. But apparently more hogs, in the sample, are raised on completely ground rations. This study did not indicate whether those supplements were commercially made or not. But this change in the feeding of hogs, said Dr. Wilhelm, "presents a real challenge—and an opportunity—to the feed business to do its hog business better, to better serve both the hog farmer—and the feed business.

Asks More Research

Dr. Elmer Kiehl, dean of agriculture, University of Missouri, told the institute that the public has a "great stake in animal agriculture." The livestock industry is in the energy conversion business—converting energy stored in plants through animals into attractive foods.

"In view of the prediction of ever-increasing potential of feed and forage output," he said, "it is imperative that we make every effort to increase the efficiency of the conversion of feed into animal products."

Dr. Kiehl called for "an aggressive, unfettered program of research" in animal agriculture as a means of relieving the imbalance of feed grains. Feed grains could be moved into consumption through efficient conversion of animal products, he explained.

The Fat Question

Dr. David Barr, president, Health Insurance Plan of New York, New York City, listed dietary rules for a reduction in the concentration of cholesterol in the circulating blood.

"The total caloric content of the diet should be so adjusted as to attain and maintain normal body weight. . . . Fat should not constitute more than 30% of the total calories. . . . Attention should be given to the kind of fat ingested. . . . This rule requires deliberate avoidance of a large part of dairy fat, fat meat and lard and substitution for them of corn oil, chicken and fish."

World Market

Discussing the potential world market for U.S. food and feed, Dr. D. Gale Johnson, dean of social sciences, University of Chicago, said he did not think large increases in our food and feed exports can be anticipated during the next decade.

"In fact, without strenuous efforts on the part of the government to move our surpluses, exports could decline," he added. "Products that appear to be in the most favorable position are feed grains, high protein feeds and fats and oils."

Protein Food Potential

Dr. Herrell DeGraff, Babcock professor of food economics, Cornell University, told the institute that acre yields of feed grains over the past decade have increased 3% a year—the same rate at which animal use of concentrate feeds for livestock has been increasing. He predicted that this 3% annual increase per acre would continue through the 1960's.

On the demand side, Dr. DeGraff pointed out that our population would continue to increase, most notably in the teen-agers and persons in their early 20's—the age group at which food requirements are highest. These will about equal 2% a year in additional food demand.

Changing dietary recommendations may have "an adverse impact on consumer demand for animal product foods—the present alleged relationship between fat ingestion and coronary heart disease," he observed.

"As long as the fat question remains a contention, as long as some members of the nutrition and medical professions continue to recommend an avoidance or cautious approach to animal fats, a much desired high level of animal production consumption will remain under a relative cloud," Dr. DeGraff asserted.

"I call attention to the fact that consumer demand is a more perishable potential than is our capacity to produce livestock products," he added. "If consumption potentials are to be realized, our products must be good in the consumer's definition of good. We must see that they are good, and then we must nurture with care the public image of these products."

Merchandising

Discussing merchandising of protein foods, Neal Hathaway, senior vice president, Raymond Loewy, Neal Hathaway, William Snaith, Inc., New York City, challenged the agricultural leaders to:

"Find better ways of classifying and describing kinds, cuts and grades of meat and poultry.

"Improve packaging, labeling, store layout and display to improve the appeal of protein foods.

"Develop new selling fixtures for retailing protein foods."

"Middle Course" Urged

Closing the two-day institute which attracted visitors from 18 states and two foreign countries, J. Carroll Bottum, Purdue agricultural economist, said the nation must find a "middle course" to bring about needed agricultural adjustments in the decade ahead.

These adjustments must be speeded for a healthy and prosperous agriculture, he observed. Some 40 to 80 million acres of cultivated land will have to be shifted to other uses, such as recreation areas, grass or forests.

Our basic problem, Prof. Bottum said, is how can we most sensibly make it easier for the flow of this land into other uses and how can we make it easier for more people on farms to flow into other lines of activity?

Government would have a role to play in these adjustments, he added. There probably will have to be some inducements to speed up the adjustments, he said, explaining that government participation may be on either a voluntary or mandatory basis.

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Rolled, Pelleted Barley Compared

CORVALLIS, ORE.—Whether rolled or whether pelleted barley fattens weaner steers cheapest and fastest depends upon when the processed barley is fed, according to research results reported by Dr. D. C. England, Oregon State College animal husbandman, and Norton Taylor, Umatilla County extension agent.

Research conducted in experimental feedlots indicates rolled barley produced cheaper and faster gains in the latter 60-66 days of feeding. But, up until then, there was little difference between grain forms—rolled or pelleted, the Oregon researchers reported in Oregon's Agricultural Progress, a publication of the Agricultural Experiment Station here.

This result, said Dr. England and Mr. Taylor, was the same for two experiments. In one, the two forms of barley were tested in a wintering and fattening ration for weaner steers; in the other, rolled and pelleted barley was fed in a finishing ration for weaners.

Dr. England noted that these experiments were started before full-feeding of rolled barley plus a protein supplement as the complete ration was suggested. Experiments are now underway at Oregon State test centers to compare this feeding approach to one using a standard roughage.

Studies Indicate Why Eggs Have Thin Shells During Hot Weather

ATLANTIC CITY, N.J.—Colorado State University research has uncovered two possible reasons for layers producing thin-shelled eggs during the hot summer months—a phenomenon which costs the poultry industry, and hence the consumer, substantial sums each year.

The Colorado studies suggest that chickens housed under high-temperature conditions either partially lose their ability to synthesize vitamin C or that blood-carrying capacity for this vitamin is reduced, Dr. Paul Thornton, Colorado State poultry scientist, said here during the American Institute of Nutrition section of the meeting of the Federation of American Societies for Experimental Biology.

Previous Research

In previous research at CSU, Dr. Thornton found that adding low levels of vitamin C to the chicken's diet partially reduced the normal decline in egg shell thickness.

Further research has shown that adding iodinated casein, a compound which steps up the bird's metabolic rate, increases the vitamin C blood level. Conversely, adding thiouracil, a compound which inhibits thyroxin output by the thyroid gland and thus reduces the metabolic rate, resulted in a decreased vitamin C blood level.

Dr. Thornton followed these tests with environmental studies in which birds were acclimatized at 70° F. for several weeks. Housing temperatures were then increased to 88° F.

Results

Within seven days, vitamin C blood content dropped sharply in birds housed at 88° and a further decline occurred after 14 days, Dr. Thornton said.

When the birds were returned to the cooler environment, blood vitamin C increased only slightly. Adding dietary iodinated casein at this time resulted in a faster return to normal.

Regardless of whether the decline in shell thickness is due to inability to synthesize vitamin C or to reduced blood carrying capacity, adding vitamin C to the laying ration during the summer months appears to have definite value, Dr. Thornton concluded.

Set 1962 Dates for Fact Finding Session

CHICAGO—The Institute of American Poultry Industries' 33rd annual fact finding conference has been scheduled for Feb. 9-11, 1962, in the Municipal Auditorium in Kansas City, Harold M. Williams, IAPI president, has announced.

A record 4,147 businessmen from the poultry and egg industry attended the three-day session this year. "It impresses on us the need for additional good hotel accommodations in Kansas City," Mr. Williams said. "And we are pleased that 411 new transient units are under construction in downtown Kansas City, none of them more than nine blocks from the auditorium. In fact, one deluxe motel is going up across the corner from the auditorium."

Hotel reservations for the 1962 conference, the institute said, will not be accepted by Kansas City until next fall.

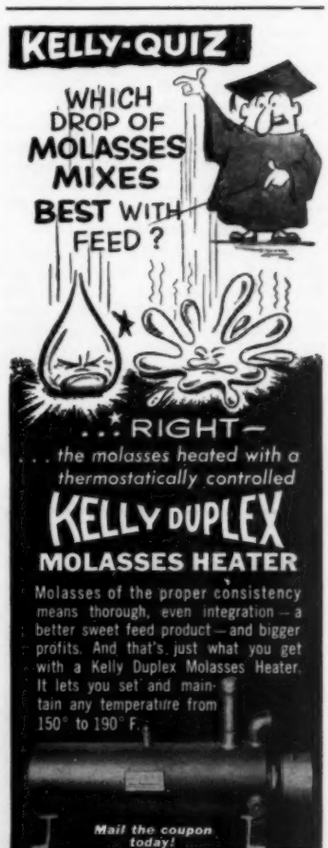
Ontario Management Course Set June 5-8

TORONTO—June 5-8 are the dates reserved for the 1961 Feed Mill Management Course at the Ontario Agricultural College, Guelph, reports a recent bulletin of the Ontario Retail Feed Dealers Assn.

The speakers' roster for this feed industry business training project consists of authorities from the ranks of the industry, government and college staffs in Canada. Also, several U.S. speakers are scheduled to participate.

The Ontario association noted that a complete program and enrollment details will be announced shortly.

"Presentations will be beamed at the top-management, decision-making level of plant personnel," the association's notice said.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FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

About Words

"A man is as good as his word." This expression is used in reference to one of the most important concepts in human endeavor. In legal phraseology "sanctity of contract" might be substituted. When a man says he will do something, this means it will be done. Other men can depend upon him. This is the foundation of sound government and sound business. Every dependable relationship of mankind where two or more persons are involved rests upon this principle.

Words, if they are to serve man's purposes, are something more than "to be kept." Even before their expression as a part of a "contract," words must be understood. Knowing the meaning of words precludes the "sanctity of contract." Unless the words used when a man "gives his bond" are understood, what good is the "bond"? "Oh, I didn't understand it that way," is often heard.

Words are the means of understanding, the means of conveying ideas. This seems so simple, so clear, it is surprising it is necessary to speak of it. Simple though it be, it remains a great problem.

We may think we know what we mean. An idea seems very real and very clear to him who has it, but having it and conveying an idea to someone else or several others is another matter. The use of words within any language is a recurring challenge.

Feed Words

What has all of this to do with feed? The Feb. 18 issue of this column mentioned "feed terminology." This was occasioned by a review of the work of a joint committee of American Feed Manufacturers Assn. and other trade associations to provide an understanding of terms used in discussions with respect to Food and Drug Administration regulations.

It was pointed out that the definition of terms is always a starting point for any discussion. Every law contains an introductory section, usually headed "Definitions of Words and Terms." This is very important. One immediately knows what each word or term that follows in the law means.

Concentrate

The interest of the special committee working with FDA had primarily to do with the definition of the term "concentrate." However, this is but one term that is used in the feed trade and in control circles, not to mention farmer parlance, the language of nutritionists, college text books and extension publications.

The April 1 issue of Feedstuffs announced a "project of importance" that has been undertaken by the Feed Production School, Inc. This is a program for stimulating interest in definitions and proposes to offer $10 certificates as an award to persons submitting definitions that are adopted by a committee of the Feed Production School. These terms are primarily terms used in industry. Details and definitions proposed thus far may be had by writing to the Feed Production School.

Dairy Feed

An experience recently brings the subject of this discussion clearly into focus. A dairy nutritionist made a suggestion with regard to a regulation under a state feed law. This had to do with a dairy feed. In making his suggestion he used the word "grain" and the amount of "grain" fed in relation to hay, pasture and silage.

From the discussion that ensued it was evident some clarification was needed with respect to his use of the word "grain." When asked about it, he said, "Grain, when used by myself and other dairy nutritionists of my acquaintance, was an all inclusive term." Used as he was using it, it might or might not refer to grains such as corn, wheat, barley, etc. "When we are talking to farmers we refer to 'grain' as anything that is fed to cows in addition to silage or hay." He went on to say the inclusive term of "grain" would include any commercial "concentrate." This might be a 32% protein product. "Grain" might refer to a 12% commercially mixed dairy feed. It might also be only an 8% protein corn—could even include ground ear corn. The word "grain" used in this way could cover soybean meal mixed with grain. In other words, "grain" to this "school" of dairy nutritionists, when talking with students or with farmers, means what a feed manufacturer might express as a "dairy feed," "concentrate," "balancer" or "soybean meal." In fact, anything other than hay, silage or pasture. The term "dairy feed" doesn't seem to be satisfactory at all.

This would seem to be a rather "loose" use of the term "grain," and if this is general, calls for clarification. Unless close agreement is reached on all such terms, everyone will need to preface every statement henceforth with a statement somewhat as follows: "Wherever the term ..... appears, it means ..... in the following report." Developing definitions of "feed" words and terms is long overdue.

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New Mill Doubles Ohio Firm's Custom Mix Sales

By Al P. Nelson, Feedstuffs Special Writer

What can happen to volume when a feed and grain firm builds a new mill with modern efficiency equipment and excellent feed handling facilities?

In the case of the Perrysburg (Ohio) Grain & Supply Assn., a new mill, which the firm opened at the edge of town in September, 1960, has doubled the custom mix business, and has also resulted in an increase in the sale of the firm's own registered brands of feed, according to R. A. Stimmel, manager. He states that customers like the quick, efficient service.

The firm has operated a grain elevator at this site for many years, but its custom mill was located downtown. However, congested conditions, including inadequate parking space, etc., induced the firm's officers to build the $100,000 mill on a site adjacent to the grain elevator. And it is a move which is paying off very well, says Mr. Stimmel.

The mill and equipment layout was done by the Hawthorne-Seving Co., Sidney, Ohio. The mill is 40 ft. wide and 120 ft. in length. It was built of concrete and steel, and there is insulation beneath the metal roof.

Other Equipment

The feed mill has two dump sinks. One is used for grain dumping and the other for seed receiving. A Hawthorne auger and screw in the basement brings the grain in from the pits, and a drag brings in the seed.

A Bryant corn sheller in the basement enables the firm to handle this feed ingredient efficiently. A cob crusher in the headhouse blows cobs out in back or grinds them and drops them into a storage bin.

There are four legs in the mill. Hawthorne has also supplied the distribution head and two 3-ton mixers. The hammermill is a Bryant 60 h.p. with 30 h.p. on the blower.

All screens can be changed from the work floor, reports Aaron Russell, mill manager. He operates the mill alone, but occasionally has help on busy days.

The mill has a ½-ton hopper bin and scale, with automated controls. Bin storage consists of 18 square steel bins, each with 11 tons capacity.

With the new mill, the firm can utilize production facilities in such a way that production of feeds can fill in periods between a heavy custom mix volume. The trade name is "Made Right Feeds."

"Our efficient layout and equipment enable us to handle all the custom work that comes in, and still have time to produce our own feeds," says Mr. Stimmel. "The nearby elevator of the company, with 75,000 bu. grain storage, gives us a steady supply of grain for whatever type of feeds we make."

NEW MILL FACILITIES—Here's an exterior view of the new mill operated by the Perrysburg (Ohio) Grain & Supply Assn. Opened in September, 1960, these facilities have doubled the firm's custom mix business and increased sales of registered brands of feed.

The cleaning and treating of seeds is also an important part of this firm's volume. In the new mill there is a Crippen seed cleaner and treater. Thousands of bushels of seed are treated annually for customers, Mr. Russell reports. The charge for seed cleaning and treating is 15¢ bu. Grind and mix charges are 10-12¢ cwt.

Bulk and Bag

Some farmers call for their feeds in bulk, but the new mill's volume is mostly in bagged feeds at present, Mr. Russell states. For that reason the two mixers are located close to the side of the building to permit easy loading of bags.

The firm also has a Randolph grain drier for its own needs. It does no custom drying.

A modernistic 40 by 66 ft. office building and farm supply store is part of the recently completed building program. This building stands closer to the road than do the grain elevator and the feed mill. At the office area, too, is a 35-ton capacity scale which weighs grain and ingredients for the elevator and the feed mill.

The farm store is stocked with poultry and livestock remedies, seeds, farm hardware and many other related farm needs. Mr. Stimmel reports that the rate of sales from the new store is very high, with many impulse sales.

"We expect to ring up a large volume on these farm supply sales," says Mr. Stimmel.

The firm also has a fine conference room, about 15 by 20 ft. in the office-farm store. Here company directors hold board meetings and here, too, Mr. Stimmel and staff can confer with farmers on their feed and other merchandise needs.

"We are making excellent use of

FARM SUPPLY STORE, OFFICES—This photo shows the new farm store and offices of the Perrysburg (Ohio) Grain & Supply Assn. The 40 by 66 ft. structure includes a 15 by 20 ft. conference room.

ELEVATOR — The grain elevator stretching skyward here is owned by the Perrysburg (Ohio) Grain & Supply Assn.

TWIN MIXERS—Aaron Russell, mill manager for the Perrysburg (Ohio) Grain & Supply Assn., bags feed at one of the firm's twin mixers shown here. Each mixer can bag off toward inside and outside of mill.

BUSINESS—The men pictured here are talking alfalfa seed stock in the new showroom of the Perrysburg (Ohio) Grain & Supply Assn. At right is R. A. Stimmel, manager of the firm, talking to a farmer.

this room," Mr. Stimmel says. "It really is paying its way."

Feeder Meetings

Mr. Stimmel is holding from five to six feeder meetings per year in the new farm store. Folding chairs are used to accommodate attending farmers, and the meetings have real farm flavor by being held in a store with farm merchandise close at hand.

During the past year the firm has erected a bulk fertilizer warehouse and mixing plant. It has a storage capacity of 300 tons, and the firm also offers bulk spreading via a 6-ton Baughman truck. Mr. Stimmel reports that the firm urges farmers to have soil tests. If the customer buys fertilizer through the cooperative, the latter will pay the soil test fee, and does not charge the farmer for this service.

"With our grain elevator, new mill and farm store, and the bulk fertilizer service, we are well set up, we believe, to meet competition in this area and serve our customers well," states Mr. Stimmel.

The firm is now in the process of adding 130,000 bu. of storage space to the elevator.

Poultry Sales Clinic

DECATUR, GA.—The Poultry Industry Sales Club has scheduled its second poultry industry sales clinic for May 22-23 at the Continuing Education Center, University of Georgia, Athens, officials of the organization stated this week.

The sales clinic is designed to improve a salesman's personal abilities in serving his customers, his company and the poultry industry. It is open to anyone now selling products or services to the poultry industry, or anyone who plans to sell in the poultry industry.

Daffin Names Officer

HOPKINS, MINN. — Directors of Dan Corp., Hopkins, have approved the appointment of Robert W. Long from assistant secretary to secretary of the company, it was announced by C. F. Pierson, president.

Mr. Long, who joined the Farmhand division of the company in 1952, is also general credit manager of Daffin Corp. and is manager of Superior Acceptance Co., a wholly-owned financing subsidiary of the machinery manufacturing firm.

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Midwest Plans Exhibits To Highlight Centennial Nutrition Conference

KANSAS CITY—An elaborate display of exhibits devoted to nutrition in humans and animals and careers in agriculture will highlight the Centennial Nutrition Conference of the Midwest Feed Manufacturers Assn. in Kansas City, Oct. 21-25.

Midwest has scheduled the event in cooperation with eight land grant colleges and to commemorate the 100th anniversary of U.S. land grant colleges. A national observance of the centennial is to be held here in November.

More than 1,000 persons engaged in nutrition and allied fields are expected to join representatives of colleges and universities from throughout the nation to hear lectures, panel discussions and seminars on the most advanced methods of nutrition, and the contribution being made by land grant colleges and the feed industry to the agricultural developments of America.

A highlight of the conclave will be a reception and dinner honoring the presidents of the eight midwestern colleges who are cooperating in the conference, scheduled for Sunday noon, Oct. 22.

Larry Alley, vice president of Pay Way Feed Mills, and president of Midwest Feed Manufacturers Assn., said that all sessions will be held in Hotel Muehlebach and that public rooms on the first two floors of the hotel will be devoted to exhibits and displays.

Interest High

"Advance interest among suppliers and educators who desire to honor 100 years of progress and research in our land grant colleges is high," Mr. Alley said, "and we are proud of the caliber of the speakers who will come here to conduct various aspects of the conference."

These include such widely known leaders as George McGovern, director of the government's Food for Peace Program; Dr. W. E. Morgan, president, Colorado State University; Dr. C. M. Hardin, chancellor, University of Nebraska; Dr. Mark L. Morris, president, American Veterinary Medical Assn.; Dr. Nevin T. Scrimshaw, head of the departments of nutrition and food technology, Massachusetts Institute of Technology, and Dr. C. A. Elvehjem, president, University of Wisconsin.

Conference exhibitors will be tied in to the over-all program by displays in four categories. These are: "Food Is a Good Buy," "Chemicals in Agriculture," "Careers in Agriculture," and a general classification

Advance reservations and exhibit arrangements are being handled through Midwest Feed Manufacturers Assn., 20 West 9th St., Kansas City 5, Mo.

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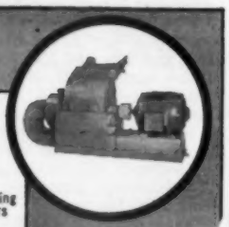

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Use of Interspace Relative Humidity To Determine Moisture Conditions For the Safe Storage of Mixed Feed

By B. D. Webb and L. R. Richardson
Texas A&M College

Critical moisture content is used to predict safe and unsafe moisture levels of individual feed ingredients including grains, grain by-products, protein concentrates, dehydrated alfalfa meals, bone meal and distillers dried grains.

In general, the critical moisture level is referred to as the moisture content which is in equilibrium with an interspace relative humidity of approximately 75%. This humidity corresponds to a moisture content of 13 to 15% for most cereal grains. The critical moisture level of 32 feed ingredients ranged from 7 to 17%.

Studies initiated to relate moisture content to heating in simple and complex feed mixtures showed that the moisture content of a feed mixture was unreliable in predicting whether a mixed feed was safe from the growth of molds and the accompanying heating and deterioration.

Many investigators have shown that the relative humidity of the interparticle air largely determines whether molds will grow on stored grains. In view of these reports, a study was initiated to determine the relation of the interspace relative humidity to the growth of molds and heating in feed ingredients and mixed feeds. These studies were reported recently by Webb, Bayliss and Richardson in the Journal of Agricultural and Food Chemistry, Vol. 8, page 371.

Relative Humidity Varied

Results of this study showed that interspace relative humidity varied with both storage temperature and the moisture content of the feed. The effect of the storage temperature on relative humidity is shown in Table 1 and the effect of moisture content on relative humidity in Table 2. When ground corn with a moisture content of 14.1% was stored at 50 or 70° F. it was safe from the growth of molds, but at 90° F. the interspace relative humidity had increased to the point where the corn was highly susceptible to mold growth and the accompanying heating. Likewise, ground corn containing 13.7% moisture was safe for a storage period of six weeks at 90° F., but was unsafe at this temperature when it contained 14.1% moisture.

These data explain why a feed ingredient or a mixed feed may be safe when stored or manufactured in a relatively cool area and then heat when it is shipped to a much warmer area. The data also demonstrate that present moisture standards for many grains and feed ingredients may be too high when used in areas where the temperature is unusually high.

The relation of moisture content to interspace relative humidity and heating in mixed feeds is shown in Table 3. The mixtures contained various combinations of ground corn or sorghum grain, soybean oil meal, dehydrated alfalfa leaf meal, steamed bone meal, fish solubles, corn fermentation extractives and animal feeding fat. No mixture with an interspace relative humidity of 72% or less heated during a storage period of six weeks. A few mixtures with relative humidities slightly above 73% (mixture No. 3, Table 3) did not heat, but any mixture with a relative humidity above 72% would be considered in the unsafe range when the feed is stored at the same temperature at which the relative humidity is measured.

Maximum Humidity

For a feed to be entirely safe, the relative humidity must be below 72%

Table 1. Effect of Storage Temperature on Interspace Relative Humidity (RH) of Ground Corn Containing 14.1% Moisture

Storage temp., °F	RH, %	Heating
50	60.6	—
70	66.1	—
90	74.1	+

TABLE 2. Effect of Moisture Content on Interspace Relative Humidity (RH) of Ground Corn Stored at 90° F.

Moisture, %	RH, %	Heating
13.3	70.8	—
13.7	71.6	—
14.1	74.1	+

EDITOR'S NOTE: *The accompanying article is from a Texas Feed Service Report issued quarterly by the Agricultural and Mechanical College of Texas. Mr. Webb is a research assistant and Dr. Richardson is a professor in the department of biochemistry and nutrition.*

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†Data available on request

TABLE 3. Relation of Moisture Content to Interspace Relative Humidity and Heating in Mixed Feeds Stored at 90° F. for Six Weeks

Did not heat

Mixture No.	Moisture, %	RH, %
1	13.0	70.8
2	12.0	69.4
3	13.1	73.2
4	12.4	70.9
5	11.7	71.4

Heated

Mixture No.	Moisture, %	RH, %
7	12.9	72.9
8	13.0	72.9
9	13.1	74.2
10	12.8	73.6
11	11.9	74.2

at the maximum temperature at which the feed is likely to be stored. Therefore, it is necessary to determine the relative humidity at this maximum temperature. The safe relative humidity was less variable than safe moisture content, and it is concluded that humidity is a more reliable measure to predict safe storage conditions for feed ingredients and mixed feed than moisture content.

The equipment for determining humidities requires an electric hygrometer, sensing elements to cover the range of safe and unsafe humidities, 250 ml. extraction flask and constant temperature bath. The relative humidities of several feeds can be determined in one day with one hygrometer and 10 to 12 sensing elements.

Scientists to Study Ovulation in Chickens

ITHACA, N.Y.—A Cornell University scientist will team up with a doctor in France this summer to explore a mysterious land of nerves and hormones that has been penetrated by only a few highly-trained specialists.

Dr. Ari Van Tienhoven of the New York State College of Agriculture and Dr. Jacques Faure of the University of Bordeaux will study physiological changes that bring about ovulation in chickens. Their findings may help pave the way toward scientific control of the number of eggs chickens lay.

Dr. Van Tienhoven and Dr. Faure will try to find out why the times of ovulation and egg laying shift each day. Ovulation, they think, is brought on by something in a chicken's environment — light, perhaps — that's present for prolonged periods. However, the neural mechanism that triggers ovulation can only respond to this stimulus at certain times.

Hormones play an important part in deciding when a chicken's nervous system will be sensitive enough to the stimulus to trigger ovulation. The researchers will vary the amounts of hormones which cause ovulation and will record the accompanying changes in the electrical impulses given off by the chicken's brain. The project will be partially supported by a $4,197 grant from the Department of Health, Education and Welfare.

Dr. Van Tienhoven will leave for France Aug. 22.

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Des Moines Feed, Grain Club Plans Field Event

DES MOINES—The 21st annual field day of the Des Moines Feed and Grain Club has been set for Monday, May 22. The event will be held at the Des Moines Golf and Country Club. Golf and other sports events during the day will be followed by a banquet and floor show that evening.

John Bramfield, field day chairman, announced the return of the field day to the country club by popular demand. Last year the activities and golf were divided between the golf course and the Memorial Auditorium in downtown Des Moines. Over $2,500 in door prizes will be given away.

Tickets will be sold on a first come first served basis. Tickets are $8 and may be obtained by mail from: Don Frantz, Nixon & Co., S. E. 21st and Maury, Des Moines, Iowa.

COMMITTEE CHAIRMEN—Des Moines Feed and Grain Club "Field Day" committee chairmen are shown left to right: Bill Rogerson, VyLactos Laboratories, entertainment chairman; Marion Diercks, Foxbilt Feeds, chairman, other activities; Marion Tierney, Boeke Feed Co., golf chairman; John Bramfield, Swift & Co., general chairman; Keith Cummings, Specifide, Inc., club secretary; Marvin Vinsand, Specifide, Inc., prizes chairman; Robert Sargent, Sargent Grain Co., club president; John McLaren, Jr., Fairall Advertising Agency, publicity chairman; Not pictured—Reed Merrick, Sargent Calcium Co., hospitality chairman; Don Frantz, Nixon & Co., tickets chairman; Wally Mann, W. P. Mann Sales Co., co-chairman, other activities.

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High Producing Cows

Dairymen attending the recent Agricultural Progress Days at Cornell University were advised to follow a program of heavy grain feeding with their high producing cows in order to get maximum production from the animals.

Dr. C. F. Huffman of Michigan State University said that contrary to widespread belief, heavy grain feeding is not dangerous to udder health. He cited experiments in which heavy grain feeding increased milk production an average of 2,031 lb. per cow lactation with no increase in mastitis.

"The fact that heavy grain feeding did not increase the incidence of mastitis leads to the conclusion that outbreaks of mastitis frequently associated with feed changes may be due to other management practices not as easily identified," Dr. Huffman declared.

Dr. Huffman warned dairy men not to use the heavy grain feeding principle with ordinary producing cows. "With high grain feeding some kind of testing program is essential, since heavy grain feeding to ordinary producing cows is a good way to lose money in the dairy business," he pointed out.

"It is a well known fact that the law of diminishing returns starts to operate sooner in low producers than in cows with inherent high producing ability," Dr. Huffman noted, adding that milk production efficiency increases as the level of grain feeding increases until the law of diminishing returns starts to operate.

The dairy scientist said a few outstanding cows might continue to increase in efficiency up to the limit of their appetites. He cited the case of a cow that produced more than 36,476 lb. of 4% butterfat milk in a year at a high degree of efficiency. Forty-four per cent of the nutrients in the feed was converted into nutrients in the milk. The theoretical top level of milk production is believed to be about 50,000 lb. of FCM (4% fat-corrected milk), he added.

"The profit depends on the price of feed compared with the price received for milk," the Michigan man concluded. "At present prices, profit above feed cost follows the increased level of milk production. It remains necessary, however, to have a testing program to eliminate the unprofitable cows."

◆

Hog Herd Improvement

"It makes sense and cents to improve the grade and quality of commercial herds of hogs," G. B. Phillips, Auburn University specialist in animal industry, advises hog men.

He states that a good way to start is to use a tested boar. He advises that a hog man can afford to pay $50-$100 more for a good boar.

This is why: He says, "On 20 sows the extra cost is only about 36¢ per pig. But recent tests indicate that hog men can expect the resulting meat-type hog to save 20 lb. or more of feed for every 100 lb. of pork gained. On a 200 lb. shote, from weaning to market, this amounts to about 30 lb. at 3¢ lb., which is a 90¢ saving on feed costs.

"At many markets, these hogs bring 50¢ per hundred more than the average which amounts to $1 per hog; therefore, the grower receives $1.90 for a 36¢ investment."

◆

Sheep 'Water Belly'

Sheep raisers can minimize losses due to "water belly" ailment which is caused by urinary calculi by making certain that sheep get plenty of good, clean water both winter and summer.

That is the advice from Dr. Royce Emerick, South Dakota State College Experiment Station biochemist. He says that water consumption can be encouraged by feeding salt. He also advised adding a calcium source such as ground limestone to high concentrate rations to balance calcium with phosphorus, which South Dakota experiments have shown to be a contributing factor if found in high levels.

◆

Curiosity Kills Poults

"Baby turkeys pick at anything which attracts their attention," says Roy Roberts, Purdue University extension poultryman. "If it is not fastened down and not too big, they often swallow it. Consequently, poults started on litter may eat enough fibrous material to cause heavy death losses."

He advises, "If ground corn cob litter is used, poults may eat enough corn, husks or small pieces of cob to completely pack their gizzards. This mass of fiber remains in the

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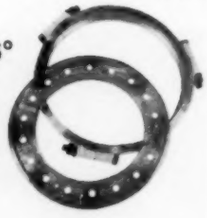

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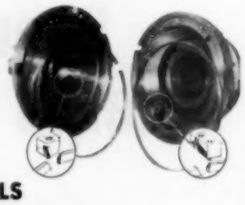

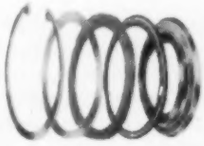

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gizzard, leaving little or no room for feed, and death results from starvation in one to three weeks. At times, poults may eat enough other kinds of litter, such as straw, shavings, peanut hulls or cane litter to cause death."

Mr. Roberts says, "Most of the mortality caused by eating litter can be prevented by covering the litter for the first five to seven days. Cloth or crinkled paper can be used to cover the litter inside the guard around the brooder. By the time the guard is removed the poults will be accustomed to eating feed and should not eat an excessive amount of litter."

◆

Debeaking Layers

Occasionally poultry men are faced with the necessity of debeaking flocks of birds after they have commenced production. Dr. Thomas W. Fox of the University of Massachusetts says that this decision is always an uncomfortable one to make and it is tempting to avoid such drastic action as handling and debeaking with the hope that the cannibalism will cease or the losses will not be too great. "However," he commented, "usually the situation goes from bad to worse and prompt action in the first place is to be recommended."

Dr. Fox cited work by Dr. D. J. Bray and co-workers at the University of Illinois. They reported no effect of the debeaking on total egg production of any of the breeds tested over a 40-week period.

Dr. Fox said, "These results would appear encouraging to anyone faced with midproduction debeaking. However, the period of choice is still prior to production."

◆

Cattle Gains Speeded

Cattle feeders who have automatic feeding equipment can increase rate of gain if they feed oftener than twice a day, so advises Dr. Hugh Henderson, extension livestock specialist at Michigan State University.

He says that there is no use having automatic equipment and then feeding only at the traditional morning and evening feeding times.

He cited an Illinois experiment that compared feed intake, rate of gain and feed efficiency of cattle fed at four hour intervals with cattle fed twice daily. Those fed six times a day gained an average of 1.87 lb. daily compared with 1.55 lb. for the cattle fed twice a day at 8 a.m. and 5 p.m., he noted.

"A timer on the completely automatic machine turned the feeder on every four hours starting at 4 a.m.," he said. Another timer turned the feeder off when the needed amount of feed was in the bunk. Feed thus was limited to the amount that each lot would clean up after a reasonable length of time.

"Researchers put a light over the feed bunk so the cattle would eat at night. After a few days, the animals went to the machine as soon as it clicked on."

During 24 hour observations, researchers noted that the self fed steers ate frequently but on irregular schedules. They noticed six distinct feeding peaks with intervals between peaks varying from two to seven hours. They said that each steer ate an average of 13 times during each 24 hour period.

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GFDNA Committee Reviews Progress In Public Relations

WASHINGTON—The public relations and education committee of the Grain and Feed Dealers National Assn. met here recently to review public relations progress since the committee's last meeting and to plan public relations guidelines for the immediate future.

The association's headquarters says that the committee discussed the favorable and fair treatment which the industry received during the recent controversial feed grains legislative proceedings and compared it to the unfavorable publicity received a year ago.

Ron Kennedy, chairman of the committee, led the review of the association's 1961-62 policy resolutions and discussion of ways to implement a public relations program as outlined by the resolutions.

Members of the committee stressed the importance of continuing and improving coordination activities with other agricultural groups which have some mutual interests. J. D. Urquhart, Lind, Wash., attended the meeting and was commended for his work as observer at the coordinating meetings of Western Wheat Associates and Great Plains Wheat, the association reported.

George Greenleaf, executive secretary, Ohio Grain & Feed Dealers Assn., reported on the success of a joint GFDNA-Ohio display booth at the Ohio convention. He said that the display emphasized the close working relationships of state associations with the national association and permitted an opportunity for Verlon Meyer, director of information for GFDNA to become acquainted with state operations.

Colombian Seeks Deal With U.S. Feed Firm

WASHINGTON — A joint-venture arrangement with a U.S. firm for the manufacture of animal feeds in Colombia has been proposed by Julio C. Laverde of Bogota, Colombia, said to be affiliated with two large oilseed crushing firms in Colombia.

Foreign Commerce Weekly reports that Mr. Laverde, who will supply the plant site and buildings, seeks collaboration with a U.S. company whose primary enterprise is feed manufacture. The arrangement sought by Mr. Laverde would include technical assistance and equipment supplied by the U.S. investor.

Mr. Laverde, whose address was listed as Molinos Tequendama, Bogota, also expressed interest in purchasing cottonseed, soybeans and flaxseed from the U.S.

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'Dienestrol Diacetate Enhances Reserpine Effect on Chicks'

BROOKINGS, S.D.—Use of dienestrol diacetate was included in the poultry research work reported in the annual report of the South Dakota Agricultural Experiment Station.

According to the report, studies with broilers showed that dienestrol diacetate (Lipamone) enhanced the effect of reserpine in increasing growth of male chicks. The optimum use level for reserpine was ½ to 1 ppm, it was stated.

Protein studies showed, the report said, that for a 60% (hen-day) egg production, 12% (calculated) was adequate for hens housed in floor pens and 13.4% was adequate for hens housed in cages. Concurrently, furazolidone at 25 gm. per ton improved egg production more consistently with caged hens and to a greater extent on the lower protein diets, the researchers say.

The researchers pointed out that erythromycin or oleandomycin each at 2 gm. per ton or a combination of furazolidone and arsanilic acid in diets for hens in floor pens improved egg production an average of 2-5%.

Other studies showed the ineffectiveness of either glucosamine at 48 gm. per ton or oxytetracycline at 20 gm. per ton when included in a diet for caged hens, whereas the combination improved egg production about 6%, the report said.

Reports on turkey research follow:

"Up to four weeks of age, Broad Breasted Bronze turkey poults require 1.32% lysine in a 20% protein diet containing 1,340 calories of metabolizable energy per pound. Supplements of 0.2% d-l methionine and 0.6% glycine are also needed for maximum growth on this diet. For turkeys over 12 weeks of age a higher efficiency diet with added fat and protein did not produce growth superior to that on a normal high energy diet containing mostly yellow corn.

"The addition of dried yeast culture to a corn-soybean or a complete type diet for breeder hens had no effect on hatchability of fertile eggs. This apparently improved egg production slightly as well as progeny growth.

"Purified type diets, deficient in phosphorus, markedly lowered egg production and hatchability of apparently fertile eggs, but did not affect fertility."

Texas Feed Microscopy Short Course Slated Aug. 7-12 at College

COLLEGE STATION, TEXAS—The fifth annual feed microscopy short course sponsored by Texas A&M College, School of Agriculture and Texas Agricultural Experiment Station will be held Aug. 7-12, at the Memorial Student Center on the campus of Texas A&M College at College Station. Training will be provided for beginning personnel in the science of microscopy.

The course will be under the direction of Ewing E. Brown, station microscopist, and will consist of lectures, demonstrations and laboratory practice in the use of microscopes to detect and identify ground ingredients in feed mixtures. It is designed especially to acquaint feed manufacturers, feed processors and personnel from other state regulatory services with the use of the methods of microscopy to effectively and economically solve problems of quality control.

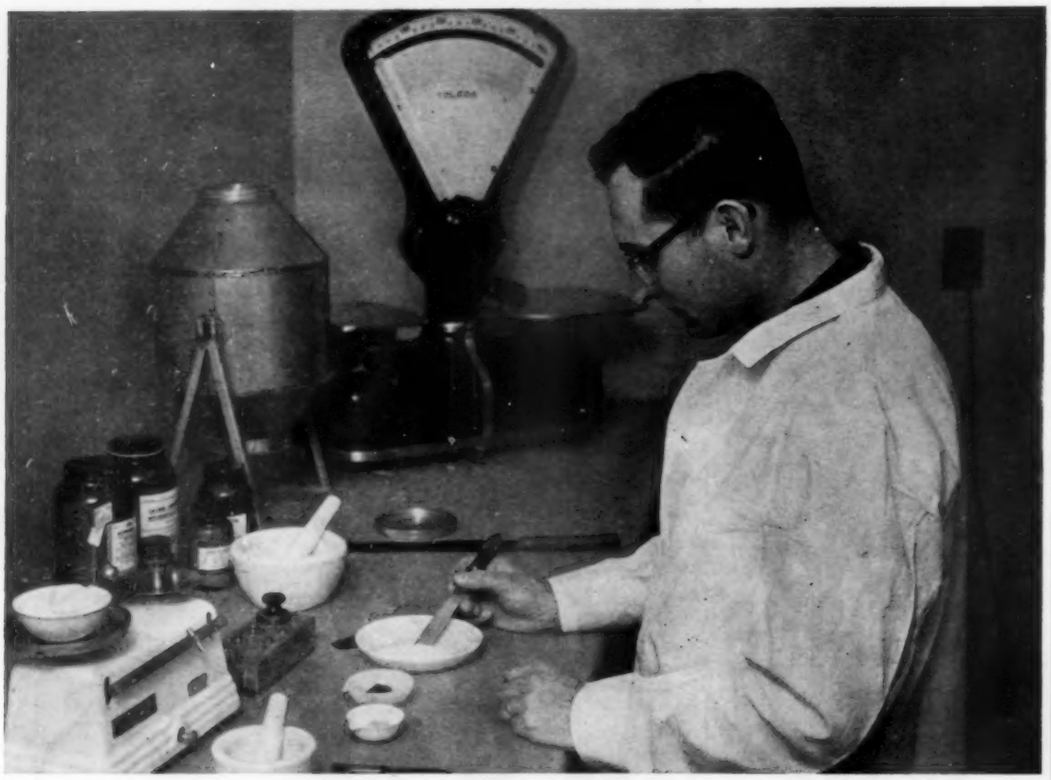
A special section will be set up for those who have had previous training and experience to study methods of ingredient separation from mixtures and determine quantitatively their percentages by microscopic analysis.

A registration fee of $10 will be charged for the 5½-day course, and a total of 50 registrations will be accepted. These will be handled on "first come, first served basis"; any received after the class has been filled will get back their registration fee.

Feed manufacturers, feed processors, regulatory services and others complying with and interested in programs for quality control are invited to send personnel to attend the microscopy short course. No previous training, experience or other prerequisites are required. The course does not carry college credit, however those who complete it will be awarded a certificate.

Those planning to attend the short course should write to Ewing E. Brown, State Chemist Office, Texas Agricultural Experiment Station, College Station, Texas, for a registration blank.

How this mixing process can make a



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This careful research program, from book shelf to feed room, takes time — more than 15 years already — but it has led to many important discoveries about the use of trace minerals in feed — discoveries that make the big difference in Lime Crest Trace Mineral Pre-Mixes. Unless you are absolutely sure about the mineral mixtures you now use, why not put this Lime Crest difference to work in your feed? At least, let us send you our latest folder and price list.

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Packaging of Broilers At Processing Level To Come in Future

ATHENS, GA.—The broiler industry will, in time, package broilers at the processing plant level, but the big question remains—how soon?

This was the consensus as 53 broiler processors and packaging people gathered here for the Southeastern Poultry & Egg Assn.'s first processor packaging workshop.

Students at the three-day workshop studied the background of packaging along with the possibilities and pitfalls as learned in other industries. They spent some time on the management changes that will occur in processing plants when a packaging program is installed.

Current packaging materials were reviewed, along with the possibilities of new products in this field and the effect they would have on present plant equipment and methods.

The final portion of the study-in-depth was devoted to a study of the retailer and consumer, their desires and the problems and potential in these areas. Two top retailers presented their views to the group in an open discussion.

"The program was designed to give poultry processors information on which they could base sound decisions," according to Harold Ford, executive secretary of the Southeastern Poultry & Egg Assn. "The workshop speakers, as a group now indicate the industry is moving in the direction of packaging broilers at the plant level. They also indicated that there are many problem areas, and that a plant has many considerations which must be carefully provided for if it is to make the move profitably."

There seemed general agreement that pre-packaging would not sweep the industry overnight, but it was noted there are at present a number of large-volume retailers who are requesting pre-packaged broilers.

Propose Exemption

MONTPELIER, VT.—Feeds, seeds and fertilizers would be exempted from a sales tax which would be established in Vermont under a new bill filed in the House of Representatives of the state legislature by Rep. John Roque, Grand Isle.

The proposal stirred up controversy even before it reached the floor of the house, according to reports.

New Moisture Tester Charts Available

CHICAGO — Seedburo Equipment Co., Chicago, has announced that the following new charts are available for all models of Steinlite Moisture Testers—500-RC, 400-G, 105-S and 105-D, for soft red winter wheat or soft white wheat (eastern production) and hard red winter wheat. A new chart has also been calibrated for the Model 500-RC, but only for white wheat (western production) and flax (not western flax).

Owners of Model 500-RC and 400-G Steinlites will be mailed the new charts. However, owners of Models 105-S and 105-D Steinlites should write for new charts direct to the Fred Stein Laboratories, 121 North Fourth Street, Atchison, Kansas. Be sure to list the model and serial number of your tester.

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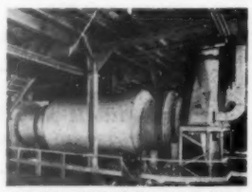
Built in a wide range of sizes, DehydrO-Mat Dryers, though comparable in price, outperform conventional dryers of similar volume. Compact, they are easy to install in a minimum of space. The varying diameter cylinder regulates air and material velocities . . . controls temperature drop and product retention time . . . assures gentle drying.



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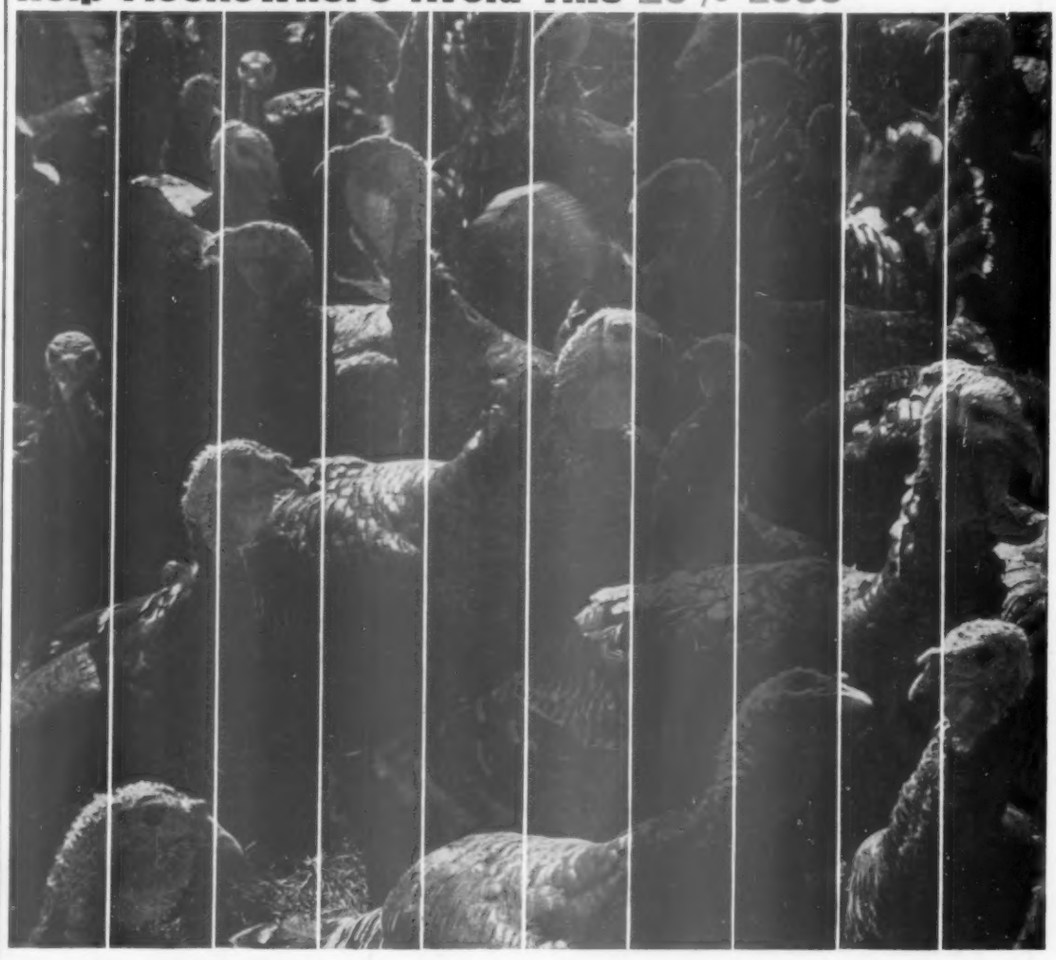

Aortic rupture can wipe out 20 per cent of a turkey flock. One investigator, for example, reports losses up to 15 birds a day in a flock of 1800 tom turkeys.

SERPASIL® Premix, the first tranquilizing agent accepted for use in turkey feeds, lowers blood pressure and stops these losses, which once were considered inevitable by growers.

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At Chemists' Meeting

Kansas Research on Effect of Pelleting on Starches Reported

DALLAS — Pelleted grains, when tested biologically, rated above grains processed by other methods in apparent digestibility, milk production, growth and feed efficiency.

This was among the results of a study at Kansas State University's flour and feed milling industries department reported by Dr. W. H. Hastings at the annual meeting here of the American Association of Cereal Chemists.

Dr. Hastings' paper on "Biochemical and Biological Measures of the Effect of Pelleting on Starches" was one of several AACC presentations of interest to the feed industry.

Pelleting of grains has been shown to produce more, and steaming less, (a) water-soluble components and (b) reducing sugars by alpha and beta amylase digestion, than unprocessed, hammermill-ground or roll-cracked grains, Dr. Hastings noted.

The research was undertaken, Dr. Hastings stated, to attempt to correlate biochemical laboratory tests with animal tests which have reported conflicting results of the value of pelleted and steamed grains. Animal tests included growth in calves, apparent digestibility in dairy heifers, and growth and feed conversion in chicks. Chicks were held in individual cages, and fed either restricted amounts or ad lib.

Since pelleting involves the addition of heat, moisture and pressure, Dr. Hastings said, these treatments were studied individually and collectively with purified starches and entire grains.

Added water (6-8%), as used in tempering grains before milling, caused a lowering of biochemical values (water-soluble components and reducing sugars by enzyme digestion), according to Dr. Hastings. Heat, with or without added water, raised biochemical values. Pressure on dry, wet, and/or heated material also raised such values.

Dr. Hastings stated further that unmodified starches of corn, milo, potato, and high-amylose corn had higher biochemical values after they were pressed into pellets; no correlation appeared between water-solubles and enzyme digestibility. Corn fiber, corn proteins, and pregelatinized corn starch, he stated, were very little affected by further processing.

Growth of chicks was improved, Dr. Hastings said, only with pressed purified starches, not by pelleted whole grains. When individually fed, their growth showed a relation to the production of reducing sugars by enzyme digestion.

The report was abstracted by Dr. Hastings as follows:

"An attempt is often made to relate the energy value of carbohydrate feeds to their fiber and nitrogen-free-extract (NFE) content. These measurements do not reflect differences in digestibility due to variety, processing and storage. Biological differences have been shown for pelleted and steamed feedstuffs. Pelleted starches and grains are highly susceptible to digestion by alpha and beta amylases and are more water soluble than unprocessed materials. The physical changes in soft feed material were carried out separately and combined, with the following results:

"(1) Compression up to 40,000 psig caused a mild starch gelatinization.

"(2) Extrusion after compression caused severe gelatinization due to shear and friction.

"(3) Starch retrogradation occurs from steam conditioning.

"(4) Soluble protein is denatured by steam conditioning and prolonged conditioning may be accompanied by a combination of soluble protein and reducing sugars.

"(5) Increased chick weight on pressed purified starches indicates that gelatinized starch is more efficiently utilized by poultry than unmodified starch. (Starches used were potato, corn, sorghum grain and pregelatinized corn.)

"(6) Chick tests with processed grains do not reflect increased starch digestibility possibly due to counteracting effects of protein denaturation and its combination with reducing sugars."

The AACC meeting this year included a number of papers dealing with various technical subjects of importance to chemists and others in the feed industry. Among the topics were feed spoilage and its control, feed microscopy, an analytical tool for measuring quality of feed products, distribution of tracer particles, bulk flow of materials, plus other subjects.

Robert C. Wornick, Chas. Pfizer & Co., Inc., presided at one of the feed sessions, and Max Cooley, Hoffman-Taff, presided at another.

Summaries of some of the other AACC papers follow:

FEED SPOILAGE AND ITS CONTROL IN MIXED FEEDS—More reliable than moisture content for determining safe storage conditions for mixed feeds and their ingredients is interparticle relative humidity, said Dr. L. R. Richardson of the Texas Experiment Station.

Dr. Richardson said that 1% of the world's grain supply, as estmiated, is destroyed by the growth of molds and the accompanying spontaneous heating.

He said that the annual loss of cereal grain and grain by-products in the U.S. is about $30 million and commented that although it is difficult to estimate the value of mixed feeds spoiled by molds, the total amount is large.

Spoilage is frequent, Dr. Richardson said, in mixed feeds containing high-moisture ingredients such as cane molasses, fish solubles or condensed fermented corn extractives. Moisture values safe for feed storage have been determined for approximately 30 different ingredients, and these values can be used for safe storage of ingredients individually. However, no moisture value that is safe for one mixed feed will necessarily be safe for another, even though it may contain the same components, Dr. Richardson warned.

Much more reliable than moisture content for determining safe storage conditions for mixed feeds and their ingredients, Dr. Richardson stated, is interparticle relative humidity. This value is measured by a single humidity-sensing element and an electric hygrometer indicator.

Safe moisture levels varied with the ingredient and ranged from 8.7 to 17.0% for 32 ingredients. Safe relative humidity of interparticle air was constant at a given temperature during six weeks storage when the interspace humidity was 72.0% or less.

Dr. Richardson pointed out that mixed feeds are less susceptible to spoilage when all the ingredients are low-moisture ones, or when ingredients usually high in moisture are relatively low.

Mold inhibitors such as sodium propionate are effective, Dr. Richardson stated. He recommended that the inhibitor first be mixed with the high moisture ingredients at an acid reaction (pH 3.0); by this procedure the amount required to prevent spoilage is only half that needed when the

solid inhibitor is added directly to the feed.

FEED MICROSCOPY IN QUALITY CONTROL AND THE FEED MICROSCOPY SHORT COURSE — E. E. Brown, Texas A&M College research microscopist, used slides in his presentation to point out the identification of ground grains of corn, sorghum grain, oats and barley as he made his point that "microscopy is as valuable as any form of analysis now used to determine quality."

Other feedstuffs were linseed oil meal, feathers raw, properly steamed and over-steamed, and several contaminants. A trained microscopist can determine the level of feed ingredients in a formula feed sample with the same accuracy as protein is determined by the Kjeldahl method, he said. Ingredient magnification by 100 to 125 times is necessary for most work. The microscope can be used to improve feeds by enabling the manufacturer and experiment stations to know exactly what ingredients are being used in formula feeds, he commented.

Mr. Brown outlined the special short course in feed microscopy that is conducted each year by the Texas state chemist department. The course is designed especially to acquaint manufacturers, processors and personnel from other state regulatory services with the use of the methods of microscopy.

PRODUCTION OF YEAST FROM BARLEY — Protein - short Montana has favorable prospects of a good source of protein, by using its low-cost barley carbohydrate as an energy source for yeast. Studies leading to this conclusion were reported by K. J. Goering of Montana State College.

Dr. Goering said, "The growing demand for protein by the livestock industry has suggested the possibility of converting low-cost barley carbohydrate or spent beer into yeast protein.

"Yields of over 50% dry yeast, based on initial carbohydrate in the barley used, have been obtained."

In these studies, Dr. Goering stated, the barley was converted enzymatically to fermentable sugars, the solids removed by filtration, and yeast produced in a continuous process by the use of a Waldhof fermentor. A study was made also on what additional ingredients were necessary to obtain highest yields and protein content.

This type of operation, Dr. Goering told his audience, suggests the possibility of reusing a substantial portion of the spent beer as make-up water in mashing, which would result in appreciable savings in the nitrogen cost. Preliminary results indicate this process may be practical for Montana, he said.

Although a final analysis of the pilot plant data has not been completed, it appears feasible to produce protein in this manner, Dr. Goering believes. The cost is expected to compete with that of imported protein meals, which are costly because of high freight charges, he added.

A COMPARISON OF THE IN VITRO DIGESTIBILITY OF HIGH-AMYLOSE CORN STARCHES WITH THAT OF OTHER STARCH —High-amylose corn starch is highly indigestible and would have extremely low feeding value for livestock, R. M. Sandstedt, University of Nebraska, told the feed technology group.

He said that if it lives up to expectations in current breeding and industrial utilization programs, it will be in commercial production in a few years. He warned any production above industrial needs would normally be diverted into feed channels and said that feed men should be aware of its inherent low feeding value.

THE THIOBARBITURIC ACID TEST—ITS APPLICAION AS AN ANALYTICAL TOOL FOR MEASURING QUALITY OF FEED PRODUCTS—E. F. Budde and E. Nehring, Central Research Laboratories, Quaker Oats Co., Barrington, Ill., said that the TBA reaction has been known for years as a method for detecting fatty-acid oxidation in tissues. Only recently has it been used to indicate incipient spoilage and off flavors in baking wheat and other food products. The reaction is more sensitive to flavor score in dairy products, fish, beef, pork, cereals and vegetable oils than traditional determinations for peroxides, aldehydes, carbonyls or conjugation.

The reagent reportedly reacts with malonaldehyde and with glyoxal to form characteristic red pigments. There are very few reports on the use of the TBA reaction for predicting keeping qualities of feed products. This is surprising in view of the importance of feed palatability to livestock and poultry. It may be used to determine the length of grain storage and to show the effect of antioxidants in general formula feeds.

XANTHOPHYLL VARIATION IN HYBRID AND INBRED CORN—IMPROVED METHODOLOGY — C. W. Blessin and R. J. Dimler, Northern Regional Research Laboratory, Peoria, Ill., said observed variations in the pigmentation value of corn by-products brought about an organized research program on the cause of this situation. It was thought that processing may account for losses or concentration of pigments. However, it was learned that variations in the amount of xanthophyll and carotenoids in the whole grain carried over in the quantity present in corn by-products.

Visual pigment intensity is not an indication of the vitamin A or pigmentation value of a corn product. A group of pigments called "flavonoids" impart at least some of the yellow and red shades of color in whole corn. These have no biological value as vitamin A or yolk pigments. Only on analysis can xanthophylls and carotene values be determined.

An interest has developed in plant breeding for those varieties and hybrids which consistently carry known levels of xanthophyll pigments. Dr. C. O. Grogan, a U.S. Department of Agriculture agronomist working at the Mississippi Agricultural Experiment Station is collaborating with the Northern Regional Research Laboratory on a study of plant breeding and inherited xanthophyll content. It is thought that a total xanthophyll value of 40 parts per million is necessary in poultry rations to impart good pigmentation to egg yolks and shanks. Corn varies from 0-45 ppm.

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STATISTICS OF DISTRIBUTION OF COLORED TRACER PARTICLES IN IDEAL SYSTEMS AND IN FEEDS—Problems of distribution arising from the blending of minute quantities of microingredients with mixtures of other solids—such as vitamins or tracers in formula feeds—were considered in experiments described to AACC members. Sylvan Eisenberg, director and owner of Anresco, San Francisco, Cal., was reporting for his group of workers on this vital aspect of feed formulation.

Dr. Eisenberg told of experimental work at the Anresco commercial laboratory, aimed at clarifying problems that arise in the blending of extremely small quantities of discrete particles with solids in large quantities. Mixtures of this kind are met in commercial feed production, he said, when microingredients such as vitamins or trace elements are blended into formula feeds.

The statistics of distribution as functions of mixing, concentration, and sample size were first determined, Dr. Eisenberg said, by experimentally examining an ideal system of traces of colored glass microbeads mixed with uncolored microbeads. The distribution of the colored tracer particles in commercial feeds was then compared to the ideal system.

"The ideal system containing one material of equal size and shape showed random variation among samples when a small quantity of colored glass microbeads was mixed with a large quantity of uncolored glass microbeads," said Dr. Eisenberg.

The average number of colored "tracer" beads per sample approached the known concentration for the entire mix with an increase in: (1) number of samples, (2) the sample size, and (3) the concentration of "tracer." The standard deviation for a group of assays decreased to a lower limit with an increase in mixing time. Colored sand and dyed salt mixed with feedstuffs were compared with the ideal system. Conclusions were: (1) the sample size should be no larger than the minimum dietary intake of the animal at a single feeding, (2) the number of samples assayed should be sufficiently large to define the mixture in terms of concentration and uniformity.

"If assays can be done at low cost," he said, "then many samples may be run, and the average assay and the standard deviation of such assays define the mixture practically in terms of concentration and uniformity better than can be done by an intrinsically more accurate assay of a single large sample."

DETERMINATION OF SUPPLEMENTAL ENZYMES IN FEED PRODUCTS—P. H. Derse, Wisconsin Alumni Research Foundation, traced the history of enzyme supplementation to feeds and commented:

"The current need in this field is for better methods of measuring enzyme activity of additives and the separation from such products of other factors which may be effective as growth promoters."

A PROCEDURE FOR THE DETERMINATION OF SUPPLEMENTAL ALPHA-TOCOPHERYL ACETATE IN PREMIXES AND FEEDS—F. Howard Tinkler and Stanley R. Ames, Distillation Products Industries, division of Eastman Kodak Co., Rochester, N.Y., presented a detailed method for the assay of alpha-tocopheryl acetate. Special extraction procedures were discussed for several types of feed materials including:

(1) Products fortified with alpha-tocopheryl acetate oil either absorbed in a ceral carrier or added directly to a product.

(2) Products fortified with alpha-tocopheryl acetate oil dispersed in gelatin or vegetable gums.

(3) Products fortified with alpha-tocopheryl acetate oil dispersed in wax or hard fat.

These forms of vitamin E are found in: Dry products such as premixes, feed concentrates and feeds; wet products such as canned foods, and expanded dog foods and baked dog biscuits fortified before expansion processing or baking.

(4) High fat products with a high level of reducing substances (antioxidants).

(5) Low-fat products.

(6) Products with a low level of reducing substances.

Limitations of the procedure were discussed.

FEEDS AND FEEDING IN OLD MEXICO—Stimulated by increasing urbanization and an expanding industrial economy, poultry and livestock production in Mexico has grown rapidly since World War II, said Harry J. Konen, feed consultant, Houston. The development of the poultry industry has been particularly rapid.

Mexico in the last five years has moved toward developing its own feed supply. Carbohydrate feeds are more or less in balance with requirements. Animal proteins are scarce, and importation increases cost. Most fish meal also is brought in. Lysine is the critical amino acid in the manufacture of productive poultry rations.

BULK FLOW OF MATERIALS IN BINS—A color sound film showing what actually happens inside a feed storage tank was shown by Art Stegner, bulk storage manager for Butler Mfg. Co., Kansas City.

The film shows the flow characteristics of various materials in hopper-bottom tanks.

STATISTICAL QUALITY CONTROL IN FEEDS—R. C. Settergren and L. Kresoya of General Mills, Inc., Minneapolis, noted that statistical techniques are becoming more helpful as feed formulation becomes more complex.

In complex multiplant operations, where much data are available, obtaining pertinent statistical data from control charts is the procedure of choice. In making such a chart, it is first necessary to define the area to be studied and how it is to be sampled. This will measure the magnitude of variation. From this point, the mechanics are relatively simple.

PRACTICAL APPLICATIONS AND PROBLEMS OF FEED NUTRITION—Harry German of Texas Farm Products Co., Nacogdoches, Texas, reviewed application of some of the newer discoveries in nutrition. He showed data on fertilized vs. unfertilized forage and on other experimental work.

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Carey Ev'r-Flo flows freely under ALL conditions to give your mixing operation top efficiency.

You can't operate a feed mill satisfactorily with a salt that begins caking when the humidity changes. You need a salt that will flow under *all* conditions. To meet this need Carey Research developed Ev'r-Flo — an entirely new kind of salt . . . designed to have maximum FLOWABILITY. After more than a year of constantly increasing sales to quality-conscious national feed manufacturers, and under the strongest guarantee in the entire salt industry, Ev'r-Flo has proved to be the best salt to use in commercial mixed feeds. On humid days it's next to impossible to keep ordinary salt dry and to keep it flowing freely and evenly throughout the entire mixing operation. Caking and lumping are often the result with ordinary salt. This means production down-time . . . and it may mean improper mixing of salt into the finished feed with resultant customer dissatisfaction.

Carey Ev'r-Flo Salt was developed to insure efficient uniform mixing of salt *in any weather, under any conditions.* Carey uses a special process and a special additive — which has been designated FL9 — to coat each grain of salt.

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Carey Ev'r-Flo Salt is available in bag or bulk. All bags have polyethylene-coated linings to protect Ev'r-Flo quality.

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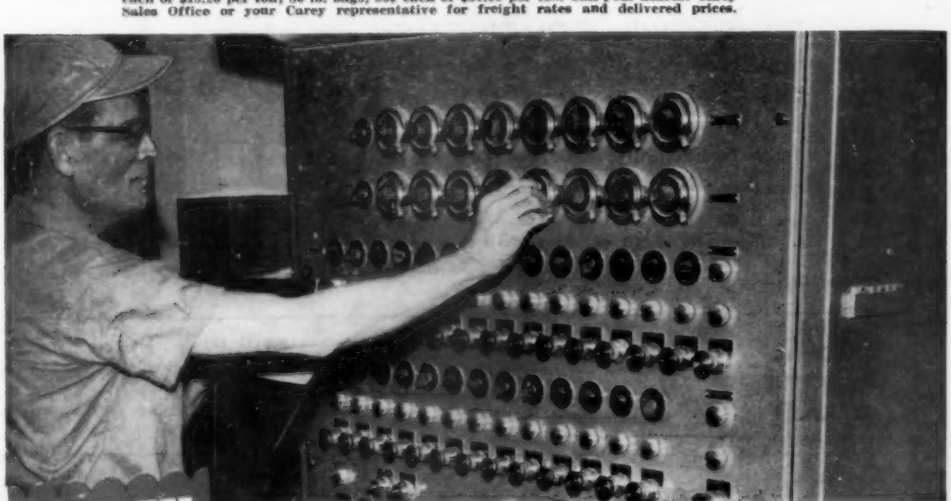
Prices, Carey Ev'r-Flo Salt (f.o.b. Hutchinson): bulk, $9.80 per ton; 100 lb. bags, 76¢ each or $15.20 per ton; 50 lb. bags, 50¢ each or $20.00 per ton. Call your nearest Carey Sales Office or your Carey representative for freight rates and delivered prices.



THE CAREY SALT COMPANY
HUTCHINSON, KANSAS

Adds Pelleting

FOREST, MISS. — New pelleting facilities have been installed at the Gaddis feed plant, according to Fred Gaddis, owner of Gaddis Industries. Mr. Gaddis said that the new 100 h.p. California pellet mill and other equipment will enable his firm to produce pellets for a "more efficient" broiler feeding program. He said that pellets will add 1 lb. of meat for every 100 lb. of feed over the mash feed.

"We have found CocciVac® the only effective way to control cocci."
Monroe C. Babcock

Babcock Poultry Farm, Inc.

PHONE: 4-6384 • P.O. BOX 286 • ITHACA, NEW YORK • CABLE "BABCOCK"

February 1, 1961

Dorn and Mitchell Laboratories, Inc.
Opelika, Alabama

Dear Sirs:

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We started using CocciVac in August 1959 and have now grown over 300,000 started pullets on it. We plan to grow 300,000 on it this year. We grow beautiful pullets on CocciVac. They live on the customer's farm. They don't die with cocci during the growing period. They don't die with it in the laying house. Production has been very good. Losses from all types of leucosis in the growing period and the laying house with our started Babcock Bessies and Bonnies have been very low.

Here's our program: CocciVac in the water at four days. Trithiadol in the starting mash. Gas brooders. Keep litter damp enough to allow cocci to sporulate. In real dry houses the floors should be wet down enough to allow coccidiosis to sporulate. Our experience shows that some chicks will show "cocci signs" at three or four weeks of age but do not die. At eight weeks they are beautiful and they stay beautiful.

Sincerely yours,

MCBabcock

Monroe C. Babcock

MCB/b

BABCOCK Chicks Make Great Layers

Mr. Babcock is one of America's leading breeders. His Babcock Bessies and Bonnies have long been noted for their profit-making abilities.

CocciVac Type 4 is available for broilers. Types A and B for layers and roasters — and for broilers in heavy exposure areas.

Dorn and Mitchell
LABORATORIES, INC.
SUBSIDIARY OF STERLING DRUG INC
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Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 25¢ per word; minimum charge $3.75. Situations wanted, 20¢ a word; $3.00 minimum. In figuring cost of your classified ad . . . each word, abbreviation, telephone exchange and number, set of initials, or group of figures counts as a word. To the number of words in your want ad itself add six (6) words for your name and address or name and address of your firm. This applies for both direct-reply ads and for blind ads containing a box number. If an ad is keyed, care of Feedstuffs, 25¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $14.00 per column inch. No discount on ads ordered for more than one insertion. All Want Ads cash with order.

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CHAMPION MOBILE GRINDER AND mixer mills. Champion Portable Mill Co., 2105 Como Ave. S.E., Minneapolis 14, Minn.

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P.O. Box 574, Jefferson City, Mo.

FOR SALE—1956 CHAMPION MILL AND mixer mounted on 1955 Chevrolet 2-ton truck. O. K. Ronningen, Pine Island, Minn. Call Elmwood 6-3811.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

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FOR SALE—ENCLOSED MOTORS; RICHardson scale; truck scales; hammermills; eat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

20200N BAG CLOSER WITH 14500 HEAD; No. 2 Forster feed grinder on cast iron base; No. 15 Prater hammer mill with 20 H.P. TEFC motor; 5W26 Jay Bee hammer mill, direct connected 150 H.P. TEFC motor with 440 volt comp.; 30 H.P. master model pellet mill with cooler, 30 dies and 4 sets rolls; G38 rebuilt molasses feed sacking scale; one ton vertical mixer; ½ ton horizontal mixer; 500 lb. horizontal mixer; many other items. General Mill Equipment Co., 2021 Pennsylvania, Kansas City, Mo.

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Specializing in repairing and overhauling Fischbeins, Union Special and Minneapolis machines. Complete line of machines, conveyors, parts, thread and oil for sale. All repairs guaranteed.

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FOR SALE—CALIFORNIA 30 H.P. PELlet mill, complete with starter, $1,500. Napoleon Alfalfa Mills, Inc., Napoleon, Ohio.

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FUMIGATION MAN — EXPERIENCED IN sales and application of grain fumigants. Some travel, home weekends. Good salary, benefits. Send resumé to Dannen Mills, Inc., P.O. Box 429, St. Joseph, Mo.

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A prominent Canadian manufacturing company requires a bilingual young man to assist in nutrition and technical services.

Applicants must be bilingual with a minimum education of Bachelor's Degree, preferably with training or experience in Animal Husbandry or Nutrition.

This opportunity is with an aggressive and growing company. Opportunities for a qualified person are unlimited.

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All replies will be treated in confidence. Our employees are aware of this advertisement. Apply to:

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WAREHOUSE AVAILABLE JULY 1—13,-000 sq. ft., all one floor (concrete and clay block structure), RR siding and truck dock facilities, plus office space. Suitable for manufacturing. Write Box 5841, Ft. Dodge, Iowa.

FOR SALE—FEED PLANT LOCATED IN good farming area in S. E. South Dakota. 200,000 bu. grain storage. Selling complete line, 10,000 tons yearly. Now operating at profit. Personnel of proven ability. Priced to sell. Address Ad No. 6812, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—POULTRY FARM IN TORreon, Coahuila, Mexico, in the heart of thriving poultry area. Capacity 58,000 broilers or 20,000 layers complete with all equipment including living quarters for employees. Excellent private water system and on municipal power within five minutes' drive of cities of 300,000 population. Many advantages such as low taxes and reasonable labor costs. Present population of 8,000 commercial layers and 2,800 broiler egg producers included in offer. Price $100,000. Can handle on convenient terms. Will consider acceptable first mortgage notes in the amount of $43,000 on property located in the U.S.A. as down payment with balance of $57,000 financed through December, 1962. Inquiries invited. P.O. Box 634, Torreon, Coah., Mexico.

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Immediate possession. Built in 1945 at a cost of over $75,000. Quick sale price now much less than half. Two five room apartments upstairs included. Building in A-1 condition. Full line of equipment, ready to go. 6,000 sq. ft. ground floor; 4,200 truck high, rest in glass front display area. Write for pictures, floor plan, machinery list, and other extras. Terms offered. Good opportunity.

Miller's Real Estate
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ATTENTION FEED SUPERVISORS AND SALESMEN

We are looking for two men to work as district sales managers. The men we want are experienced in selling feed direct to the feeder. They must be free to travel and stay out up to three nights a week, be able to hire and train salesmen, and to organize and direct sales activities within the areas assigned to them. We are looking for successful men. The areas to be supervised at present are in Iowa and Illinois.

We offer salary, expenses, override group hospitalization and insurance, a profit sharing plan and a chance to grow and advance with a well established but rapidly expanding company. Men selected must be between 30 and 55 years of age.

For further information write Ad No. 6845, Feedstuffs, Minneapolis 40, Minn.

RESEARCH NUTRITIONIST
(POULTRY)

National manufacturer of formula feeds has an unusual opportunity available for a poultry nutritionist. Responsibilities will include the design, summarization, and scheduling of experiments at research farm as well as the control of product formulation at production level. Prefer a man with an M.S. or Ph.D. in poultry nutrition with concentration in biochemistry, who has had two to three years' experience in experimental research. Position represents an excellent professional opportunity with growing organization. **Send complete resume in confidence, to Ad No. 6842, Feedstuffs, Minneapolis 40, Minn.**

MACHINERY WANTED

WANTED—USED CORN DRYER, 350,000 to 500,000 BTU natural gas or oil. Write Box 1432, Des Moines, Iowa.

WANTED—USED 9" OR 12" SCREW CONveyors for New York. Address Ad No. 6833, Feedstuffs, Minneapolis 40, Minn.

WANTED TO BUY — RICHARDSON Scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

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NUTRITIONIST, Ph.D., EXPERIENCED IN research, quality control, and formulation desires to relocate. Major interest turkeys and other poultry. Address Ad No. 6828, Feedstuffs, Minneapolis 40, Minn.

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A CHALLENGING OPPORTUNITY FOR an aggressive, dynamic, young family man. College graduate. Feed manufacturing experience in production, sales, creative merchandising, purchasing, accounting and credit. Address Ad No. 6835, Feedstuffs, Minneapolis 40, Minn.

MANAGEMENT - CHEMICAL ENGINEER. Experienced plant manager, assistant plant manager, plant-production superintendent in feeds, grain, soybean processing, fats, oils, hydrogenation, vitamins, distillery, dry-wet milling, food, chemicals. Address Ad No. 6827, Feedstuffs, Minneapolis 40, Minn.

Arkansas Plant Board Adopts Changes Asked By State Feed Men

LITTLE ROCK — The Arkansas State Plant Board has adopted a number of changes in feed regulations requested by the Arkansas Feed Manufacturers Assn.

The changes deal with the requirements for exemption from the 10¢-a-ton inspection fee, and include:

Regulation No. 4, paragraph 1: Each manufacturer, jobber, or agent shall forward a notarized tonnage report to the plant board not later than 30 days after the end of each quarter. Such report shall include the tonnages of the following feeds and be accompanied by an inspection fee equal to 10¢ per ton:

(A) All concentrated commercial feeding stuffs except contract feeds herein defined.

(B) Ingredients supplied by the final purchaser for use in custom-mixed feeds.

Contract feeds are defined as "those feeds owned solely by a manufacturer or feed mixer which are distributed under a written contractual agreement to a feeder for the specified purpose of feeding animals or poultry under a joint venture or mutual undertaking between the feeder and manufacturer or feed mixer.

The new regulations specified that all quarters shall end Sept. 30, Dec. 31, March 31 and June 30.

The regulations specify that any person or dealer in Arkansas buying from a trucker who does not have an invoice, bill of sale or delivery receipt showing that the inspection fee has been paid, must report his tonnage quarterly and pay the inspection fee due.

IOWA FIRM EXPANDS

EAGLE GROVE, IOWA—Directors of Eagle Mills, Inc., a feed ingredient processing firm, have approved plans for expanding the business which was organized last year. Planned are a 40 by 120 ft. storage building and a concrete block office building, according to Gordon Hoath, president and general manager. Mr. Hoath said that business volume demands the extra room for efficient operation.

NUTRITION

(Continued from page 11)

phosphorus for turkey poults under field conditions. The chick requirements suggested by Mr. Fritz are in agreement with those previously reported during the annual meeting of the Poultry Science Assn. in 1960, and by a number of workers where reports were given on the subject of calcium and phosphorus requirements before the 1960 Informal Poultry Nutrition Conference.

It should be pointed out that considerable work has been done on the calcium and phosphorus requirements of broilers by the research group at International Minerals & Chemical Corp. research laboratories. These workers have presented data which show that the total phosphorus necessary in a broiler feed formula should be in the range of .7%. At least .45% of this should be inorganic phosphorus. The writer's recommendations for the calcium and phosphorus level in practical broiler feeds is 0.8% calcium and 0.7% for phosphorus.

Calcium for Layers

The second paper in this series was presented by Dr. C. W. Deyoe, Texas A&M College. Dr. Deyoe presented data showing that the calcium levels in laying hen diets should be at least 2.75% or higher. Higher levels up to 3.5% were indicated during warm weather. A level of 6% calcium had a slight adverse effect on egg production. This might have been due to poor palatability of the diet when 6% calcium was used. Two sources of phosphorus were also used in Dr. Deyoe's investigations. One was defluorinated rock phosphate and the second was colloidal phosphate. The colloidal phosphate apparently served as a satisfactory source of phosphorus when used to supply three fourths of the added phosphorus in the formula, but in agreement with earlier reports by a Louisiana State University group the calcium availability in colloidal phosphate is not as good as that in defluorinated rock phosphate. Thus, a higher level of calcium may be indicated when colloidal phosphate is used as a source of phosphorus in laying hen diets. It should be pointed out in this instance that colloidal phosphate may be used as a source of phosphorus in laying hen diets and certainly the feed formulator could balance out the calcium to take care of the lower calcium availability in this product.

It was quite definite from the report of Dr. Deyoe which confirms a number of other investigations that 2.25% calcium is inadequate for optimum results with regard to egg shell quality. The writer recommends 2.75% calcium during the period from Nov. 1 through April 30 and 3 to 3.5% calcium during the period from May 1 through October 31.

Calcium Lactate

The third paper in this series was presented by Dr. W. S. Wilkinson, Louisiana State University, Baton Rouge. Dr. Wilkinson first reviewed data from English investigations where calcium lactate had been used in rations for layers. The object of the investigation was to determine where the calcium lactate might have an effect on improving egg shell quality. A report was also given where the calcium lactate was used to replace supplemental calcium in broiler feeds. From the results of the English work, it was concluded that the calcium lactate improved egg production and feed conversion. Calcium lactate was used to replace all of the calcium supplement in the laying diets.

From the results of Dr. Wilkinson's investigations, no effect was noted on egg production to a slight decrease in egg production after five weeks. The weight of the eggs or the size of the eggs decreased; therefore, it might be concluded that calcium lactate had a slight detrimental effect on egg size. The use of calcium lactate in laying feeds at a level of approximately 10%, which was required to take the place of the added calcium in a laying feed formula, decreased feed intake and improved feed utilization in floor pens, but these results were not consistent in the cages. The use of calcium lactate had a slight effect on decreasing body weight. The product also had a slight beneficial effect on interior egg quality but no effect on egg shell quality which it was hoped that the calcium lactate might influence. In general it might be stated that the substitution of calcium lactate for oyster shell or limestone as a source of calcium in laying feeds improved feed conversion, and this was about the only positive effect observed from the compound.

When the calcium lactate was substituted for the calcium supplement in broiler feed formulations, the compound decreased growth slightly, decreased feed consumption and had a slight detrimental effect on feed conversion. Thus it would appear that the use of calcium lactate in broiler feeds is not indicated and further investigations might be carried out with laying hens.

Zinc and Copper

Dr. C. H. Hill, North Carolina State College, Raleigh, N.C., presented a very interesting paper in the mineral series on the interrelationships between zinc and copper in chick nutrition. In the estimation of the writer, Dr. Hill is the first to produce a true copper deficiency in chicks. This was done by using zinc as an antagonist for copper. Under these circumstances, chicks fed 400 ppm. of zinc had a mycrocytic, hypochronic anemia. In addition to the hematological effect, copper plays some role in the maintenance of life from the results presented by Dr. Hill, since there was a 100% mortality if copper was not given to the birds in some form.

Dried skim milk was used as a source of protein in these investigations. This feed ingredient has been used for over 30 years in studies where iron and copper deficiencies have been used to study the effect of these ions on hemoglobin formation. The level of zinc currently being used in the feeds is not detrimental, according to the work of Dr. Hill. It might be interesting to note that from a practical standpoint Dr. Hill's data provides some reason for adding copper to a trace mineral mix in the formulation of poultry feeds. The level of copper used in Dr. Hill's studies was 10 ppm. The principal point, as emphasized above from Dr. Hill's investigations, was that for the first time a true copper deficiency has been produced in the chick and, without supplemental copper, there was 100% mortality. This illustrates that copper does have a function in the maintenance of life for the chick which has not been heretofore recognized.

Dr. Hill used 50, 100, 200 and 300 ppm. of zinc in a second experiment. The per cent mortality produced by the zinc supplementation ranged from 18 to 88%. This could be overcome by adding 10 ppm. of copper to the diet. Thus it can be stated that 10 ppm. of copper overcame any effect on the birds with regard to depressed growth and mortality up to 300 ppm. From the practical standpoint, it might again be pointed out that the use of zinc in poultry feeds at levels ranging from 50 to 65 ppm. is perfectly safe, warranted, and should be continued. It might be wise to consider addition of copper at the 10 ppm. level.

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PAXCO DEHYDRATED CORN COB MEAL is available in six grinds—from the coarsest to the finest — for all feed applications—roughage, pellets and as a carrier for molasses and feed additives. Write today to:

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DISCOVERY TESTED—Thiabendazole, a new anthelmintic discovered by scientists at the Merck Sharp & Dohme Research Laboratories, is being tested here for its action on the intestinal roundworm of swine. In the experiment, a worm is suspended in the glass cylinder, while its reactions to thiabendazole are recorded graphically, as shown at left.

New Anthelmintic for Parasites Discovered

RAHWAY, N.J. — A new "broad-spectrum" anthelmintic to combat gastrointestinal parasites of domestic animals and possibly man has been discovered by scientists at the Merck Sharp & Dohme Research Laboratories, a division of Merck & Co., Inc.

A report by the Merck scientists in the current issue of the Journal of the American Chemical Society describes the new agent, thiabendazole, as "highly potent" against a wide range of gastrointestinal parasites. "It has a wide margin of safety and is at least 10 times more potent than phenothiazine, which has been commonly used in domestic animals for more than 20 years," the scientists say.

"Thiabendazole is particularly effective against roundworms, the most important cause of helminthic infections in sheep, goats, cattle, horses, swine, dogs, poultry, and man," the scientists report.

Tapeworm Work Started

Evaluation of the action of thiabendazole against tapeworms and other important gastrointestinal parasites is also under way.

Thiabendazole represents discovery of a new class of anthelmintic agent. The culmination of more than five years of Merck research, thiabendazole has proved "outstanding" among several hundred related compounds synthesized by the Merck chemists, their report states.

"The broad-spectrum action of thiabendazole extends to larval forms of helminths, including those embedded in the walls of the gastrointestinal tract as well as embryos which spread the disease," the researchers report. "This advantage promises more complete and longer lasting control of helminthiasis. . . . An effect also has been observed on the migrating parasitic stages of roundworm and kidney worm in swine. . . .

"At least 13 different species of gastrointestinal parasites of sheep are responsive to the new agent. More than half of these species are not responsive to phenothiazine.

"The effect of helminthic disease on weight and growth of animals is the primary cause of economic losses. Thus, widespread use of thiabendazole may reduce costs of production of meat, milk, leather, wool, poultry, and other animal produce. In early field trials, for example, one group of lambs which received single oral doses of thiabendazole gained 43% more weight in the following eight weeks than those which had received phenothiazine."

With a view to entering large-scale production of thiabendazole, design and engineering studies are nearing completion and several plant sites are being considered. Date of its introduction will depend on completion of clinical field trials and construction of production facilities, Merck officials report.

Merck announced that in addition to its use as a treatment, thiabendazole is being studied for prophylactic use as an additive to feeds or to salt mixtures for grazing animals.

"Another advantage of thiabendazole is that its administration does not cause discoloration of the animal's hide or coat. . . . It can be handled by man without danger of skin irritation or other toxic effects," the scientists say.

Their report speculates that thiabendazole apparently interferes with a metabolic pathway essential to a variety of helminths, but not to mammals or microorganisms. This would explain the selective action of thiabendazole, which is fatal to helminths but relatively harmless to mammals.

Chemically, thiabendazole is 2-(4'-thiazolyl)-benzimidazole.

Merck Sharp & Dohme scientists reporting the discovery include six chemists—Dr. Horace D. Brown, Alexander R. Matzuk, Miss Ivi R. Ilves, Louis H. Peterson, Dr. Stanton A. Harris and Dr. Lewis H. Sarett—and four biologists—Dr. John R. Egerton, Jerome J. Yakstis, Dr. William C. Campbell and Dr. Ashton C. Cuckler.

Memphis Grain, Feed Club Elects Officers

MEMPHIS — Memphis Grain & Feed Club members elected J. C. Prahl, Riverside Oil Mill, Marks, Miss., president during the annual election and party at Colonial Country Club here.

Mr. Prahl succeeds James R. Spicola, transferred several months ago to Minneapolis, by Cargill, Inc. Mr. Prahl, 1960 vice president, filled in as president for Mr. Spicola after the latter moved to his new position.

Other officers named were Dale King, Standard Commission Co., vice president; Elmer E. Short, The Pillsbury Co., secretary, and G. W. Cole, Buckeye Cottonoil Division, treasurer.

New directors elected were James K. Sartain, Ralston Purina Co., and Charles M. Keith, Mitchell, Hutchins & Co.

Carryover directors are Leonard F. Dienell, Allied Mills, Inc., and Edward V. Frazer, Missouri Pacific Lines.

Plans are under way for the second annual summer golf tournament and party slated to be held during June or July.

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By T. J. Cunha, Department of Animal Husbandry and Nutrition, University of Florida

A new text for feeders, teachers of animal husbandry and their classes, county agents, nutritionists and workers in veterinary pharmaceuticals. Dr. Cunha is head of the Department of Animal Husbandry, a member of the Nutrition Committee of the American Society of Animal Production and the Swine Nutrient Requirements Committee of the National Research Council. The book includes reports on the most recent scientific feeding studies on swine. 398 pages, 47 tables, 40 illustrations **$5.00**

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A text on turkey raising and marketing by Stanley J. Marsden, Poultry Husbandman at the U.S. Research Center, Beltsville, Md., and J. Holmes Martin, Head of the Poultry Department, Purdue University. Covers breeding, rearing, feeding, preparation for the market, shows, diseases and their prevention and control. 1,000 pages, 124 illustrations **$7.00**

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CORN PRODUCTS

(Continued from page 7)

Henry Mays, assistant general manager, and Dr. Victor Heiman, manager of the division.

Mr. McLeod has served for many years in the feed industry. He joined the organization today known as Wirthmore Feeds, Inc., in 1928, before it was affiliated with Corn Products. A year ago he was named chairman of the board of Wirthmore, a position he continues to hold, along with that of assistant to the president of Corn Products Co.

Mr. Mays came to Corn Products in 1947 from the U.S. Department of Agriculture, and has since then been active in feed sales. In 1955 he was named a vice president of Corn Products Sales Co.

Dr. Heiman was formerly director of animal nutrition in Corn Products' technical division. He joined Corn Products in 1937.

SUMMARY

(Continued from page 4)

be considered acceptable for use in dairy, poultry, swine, pet, etc., rations? This would mean a separate list for each kind of animal. For example, oat mill by-product may be acceptable in dairy rations, but not in broiler or pet rations.

NO RESERVATIONS

Control		Industry	
Yes	No	Yes	No
14	10	33	16

WITH RESERVATIONS

Control		Industry	
Yes	No	Yes	No
1	1	3	1

Investigator's comments: (See comments for Question 2.)

2. WOULD YOU FAVOR THE substitution of a statement such as "This feed contains no ingredients not listed in the AAFCO Official Publication as suitable for use in this type of feed" for the list of ingredients? This would necessitate a change in state and federal laws.

NO RESERVATIONS

Control		Industry	
Yes	No	Yes	No
9	16	22	24

WITH RESERVATIONS

Control		Industry	
Yes	No	Yes	No
2	1	2	1

Investigator's comments: I expected that both of these would be answered the same way. The idea is that a qualified committee, including industry, university and federal nutritionists, could study each of the definitions appearing in the AAFCO Official Publication, and include a notation such as "not acceptable in broiler or pet rations" for an ingredient such as oat hulls, for example. Revisions would be made whenever necessary.

I intended No. 1 as a prerequisite for No. 2. Some control officials and industry members have suggested that, in lieu of the ingredient statement, a positive statement such as "Ingredients used are acceptable to the ..... as suitable in this type of feed." The authority named could be the state chemist, the AAFCO, the NRC, the state agricultural experiment stations or some other authority.

Because there were more "yes" responses to No. 1 and more "no" reponses to No. 2, it is evident the two questions should have been more carefully worded. The "votes" seem close enough to warrant further study.

3. DO YOU FAVOR MORE quantitative guarantees such as those for calcium, phosphorus, trace minerals, key amino acids and vitamins, especially for those that may be present in insufficient amounts unless great care is taken to use the right ingredients in the right amounts to supply these factors? This might apply also to the quantitative declaration of antibiotics for which no therapeutic claims are made.

NO RESERVATIONS

Control		Industry	
Yes	No	Yes	No
19	5	14	35

WITH RESERVATIONS

Control		Industry	
Yes	No	Yes	No
2	1	1	2

Investigator's comments: It is apparent that control officials favor more quantitative guarantees than do industry members.

4. DO YOU CONSIDER THE present label information satisfactory?

NO RESERVATIONS

Control		Industry	
Yes	No	Yes	No
5	14	10	37

WITH RESERVATIONS

Control		Industry	
Yes	No	Yes	No
6	1	2	2

Investigator's comments: The majority of those replying think the present method of labeling is not satisfactory.

5. WOULD YOU FAVOR THE "open formula"?

NO RESERVATIONS

Control		Industry	
Yes	No	Yes	No
3	20	3	48

WITH RESERVATIONS

Control		Industry	
Yes	No	Yes	No
1	0	0	0

Investigator's comments: The "vote" on this is conclusive and further consideration is not warranted.

6. IF THERE WERE NO EXISTing state and federal laws governing label information, and you were "starting from scratch" to develop the kind of label you think would be the simplest and most informative to the buyer and offer him the most protection, what changes, if any, would you make in present label information?

7. OTHER COMMENTS?

Investigator's comments for both 6 and 7: Enough comments have been received to make a small book. They range in essence from "Let's let sleeping dogs lie" to the suggestion of a tag bearing only the product name with suitable directions for use. In all cases it is recognized that medicated feeds must be labeled in accordance with FDA and state requirements.

Excerpts from "pro" and "con" replies will be incorporated in the report to be made in Chicago (May 7-10).

8. DO YOU THINK FURTHER study of this matter would result in improved label information?

NO RESERVATIONS

Control		Industry	
Yes	No	Yes	No
25	2	44	4

WITH RESERVATIONS

Control		Industry	
Yes	No	Yes	No
2	0	1	0

Investigator's comments: The majority wants further study of feed labeling.

CALIFORNIA

(Continued from page 4)

Dale Frances, Poultrymen's Cooperative Assn.

Among resolutions passed was one directing the association to ask the Commodity Stabilization Service to move more grain to available storage in California. It was passed over objections of a member who argued that long-term storage of government grain would disrupt grain trade in the state. Members also voted to request that grain support prices be equalized between Portland, Seattle, Los Angeles and San Francisco.

Also, it was decided to request that Food and Drug Administration "use more judgment" in setting drug tolerances. One of the association's accomplishments in the past year was working out with the Bureau of Field Crops a problem of insecticide tolerance levels in dairy feeds.

Special Welcome

Convention talks are reported elsewhere in this issue. A special welcome greeted one of the speakers, Wayne Nusbaum, treasurer of Ralston Purina Co., St. Louis, who started his feed industry career in California in 1941.

An article in the May 6 issue of Feedstuffs by Mr. Nusbaum will cover the subject on which he talked at the convention, "Integration and Its Effects on the Feed Manufacturer."

Winslow Hall, Pacific Molasses Co., was general chairman of the convention. Next year's convention will be held at the Biltmore Hotel in Los Angeles, with Charles Hester, C. C. Stafford & Co., Puente, in charge of arrangements.

K-STATE

(Continued from page 1)

will include tours of the flour and feed milling buildings, agronomy farm, animal husbandry feedlots, home economics department and the Oscar Straube Memorial Scholarship House.

Dr. Shellenberger will preside at the morning program where students will hear from three different speakers on career opportunities. Speakers and their topics will include Dr. C. Peairs Wilson, dean of resident instruction, school of agriculture, "Careers in Agriculture"; Ellis English, president, Commander Larabee Milling Co., Minneapolis, "Career Opportunities in the Flour Milling Industry," and James North, president, Nutrena Mills, Inc., Minneapolis, "Career Opportunities in the Formula Feed Industries."

High school students are also invited to attend the special dedication ceremonies of the new milling technology building in the afternoon. Orville Freeman, secretary of agriculture, will deliver the main address.

Dr. Shellenberger is urging feed manufacturers and feed dealers to use their influence to encourage high school students to attend the dedication event. This is especially important for persons in the industry who are within one day's traveling time of Manhattan because in such instances, high school students could be asked to accompany feed millers to the dedication ceremonies, said Dr. Shellenberger.

New All-Liquid, Oral Terramycin Announced

NEW YORK — An all-liquid, oral form of Terramycin useable by stockmen against animal diseases has been announced by Chas. Pfizer & Co., Inc.

The firm says the product, Terramycin Liquid Concentrate, is an "improved stable and soluble form of the proven broad spectrum antibiotic" marketed through a complete line of animal health products of its Agricultural Division.

Pfizer's announcement continued, "Formerly available only as a poultry health formulation, Terramycin Liquid Concentrate will have important disease-fighting advantages to stockmen against all oxytetracycline (Terramycin) susceptible micro-organisms.

"The 100% soluble product, designed for use in water, will be highly specific for gram positive and gram negative bacteria, spirochetes, rickettsiae, pleuropneumonia-like organisms and certain of the large viruses and protozoans."

Spokesmen for the firm said that advantages of this new livestock and poultry health product are: Because of its solubility, Terramycin Liquid Concentrate will not clog waterers or automatic equipment; it is not affected by varying pH's of water commonly used on farms; it will remain stable in body fluids, blood serum and exudates; it will not freeze and refrigeration is not required; the product is rapidly absorbed from the intestinal tract in farm animals; it is completely palatable; it is completely safe when used as directed; animals need not be kept off feed prior to its use; it can be used for herd or individual medication; it can be administered by spoon or diluted with water, milk or milk replacers.

$500,000 Colorado Fire

LA JUNTA, COLO.—Two airport buildings, leased by Western Alfalfa Products Co. here, were destroyed by fire which caused an estimated $500,000 in damages.

A. W. Noel, operator of the alfalfa processing firm, said the loss included $145,000 to two former air force hangars used by the company, and about $350,000 worth of feed contents and machinery, including three vehicles.

REBUILD BURNED MILL

ARCADE, N.Y.—Construction of a new John Sixt & Son feed mill is underway here to replace one destroyed by fire recently. Edward Sixt, owner of the feed mill, said the new mill is being constructed on a four-acre plot north of town.

TOP OF THE HOPPER

(Continued from page 2)

employment at an average annual salary of $5,200, while at the Ph.D. level, the average was $7,200. By comparison, in 1958, the figures were $4,700 and $6,000, respectively.

The differential between the two groups has widened to 40% and, in some areas, to as much as 50%. A factor in the salary spread has been the growth of agricultural research in industry with an increased need for persons with Ph.D. backgrounds. Correspondingly, the ratio of undergraduates to postgraduates has diminished. In 1960, the ratio was 2.4 undergraduates to 1 postgraduate, whereas 10 years ago the ratio was 6.3 to 1.

The survey indicated that job opportunities in 1961 are about the same as in 1960. Job openings are slightly greater than the number of graduates.

A SAN FRANCISCO advertising man, preparing for a speech at the California Hay, Grain & Feed Dealers Assn. convention, said he talked to a number of feed men about their advertising programs. One told him, he says, that "the best advertising I could do is advertise the business for sale."

A PACKAGING COMPANY is strongly promoting more sales of turkey meat without the bones. It suggests that a processor's "turkey bar" prepared for institutional sale can be easily cut into "turkey squares" which are a natural for retail markets. It says many stores want to know where they can get these squares and are ready to promote a "dinner in 30 minutes" deal including some other quick foods.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Chicago: Demand fair; trend steady, no change; supply ample; dehydrated, 17% protein, 100,000 units vitamin A $48@49.50.
Portland: Demand slow; trend steady to fair; supply adequate; $41@73.
St. Louis: Demand fair; trend easier; supply limited; dehydrated, 17% protein, 100,000 units vitamin A pellets, bulk $47.50, unchanged.
Ft. Worth: Demand fair for dehydrated, slow for suncured; trend steady; supply sufficient; sacked: dehydrated, 17% to 20%, 100,000 A $51, truck or rail, down $1; suncured: 13% ¼-in. grind, No. 1 $45, truck; 15% fine ground, dry $47 with 2% fat added $49, rail or truck, unchanged.
Los Angeles: Demand and trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $51@52; dehydrated pellet meal, 17% protein, 100,000 A $53@55; suncured meal, 15% protein $43@44; suncured crumbles, 15% protein $45@46; all unchanged.
Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $46, down $2; reground pellets $50.60, down $1.
Cincinnati: Demand fair; trend lower; supply adequate; 17% dehydrated, 100,000 vitamin A pellets $52.50@53.50, down 50¢.
Buffalo: Demand fair to poor; trend steady; supply adequate; $64.10, sacked, Boston, unchanged.
Kansas City: Demand slow; trend steady; supply ample; 17% dehydrated alfalfa, 100,000 A, pellets $45@48, reground pellets $46@49; 18% dehydrated alfalfa, 125,000 A, pellets $46@51, reground pellets $47@52; 20% dehydrated alfalfa, 150,000 A, pellets $49@57, reground pellets $50@58; dehydrated prices unchanged; suncured alfalfa, demand slow, supply ample, 13% pellets $32@34, No. 1 ¼-in. $38, sacked, unchanged.
Seattle: Demand fair; trend easy; supply ample; suncured 15% protein $38, Seattle, down $10 (new crop); dehydrated, 150,000 A units $71, Seattle, no change (old crop).
Minneapolis: Market remains steady; 17% dehydrated, 100,000 units vitamin A reground pellets $51, delivered Minneapolis; oiled reground pellets $53.
Denver: Demand fair; trend steady to weak; supply ample; $46.

ANIMAL FAT (STABILIZED)

San Francisco: Demand good; trend up; supply ample; bleachable fancy 8¾¢ lb.; yellow grease 8¢ lb.
Los Angeles: Demand slow; trend unchanged; supply adequate; 7½¢ lb., unchanged.
Chicago: Demand less aggressive; trend easier by 12½¢ cwt.; supply ample; tank truck or carlot, bleachable fancy tallow $7.87½ cwt., yellow grease $7.25 cwt.
St. Louis: Demand good; trend firm; supply tight; yellow grease 7¾¢ lb., delivered tank trucks or cars, unchanged.
Ft. Worth: Demand good; trend slightly easier; supply moderate; prime tallow, tank cars 8¢ lb., drums 9½¢ lb., f.o.b. north Texas packing plants with returnable drums, unchanged to ¼¢ down.
Memphis: Demand fair; trend slightly off; supply ample; yellow grease 7¾¢ lb., down ¼¢; prime tallow 7¾¢ lb., down ¾¢.
St. Paul: Price off ¼¢ to 7¾¢ lb., f.o.b. producer's plant for bleachable fancy; demand good, supply ample.
Atlanta: Demand good; trend stronger; supply short; 7¾¢ lb., f.o.b. Alabama and Georgia processing plants.
Kansas City: Demand fair; trend steady; supply tight; stabilized prime tallow 7¾¢ lb., down ½¢.

BARLEY FEED

San Francisco: Demand fair; supply ample; rolled $61, ground $60.
Portland: Demand fair; trend steady; supply adequate; $44.50.
Baltimore: Demand fair; trend steady; supply ample; $46.50, sacked.
Chicago: Demand and supply fair; trend firm; $36, sacked.
Los Angeles: Demand slow; trend weaker; supply adequate; $2.47½ cwt., down 2½¢.
Denver: Demand good; trend steady to stronger; supply short; $2.35 sacked, $2.10 bulk.
Seattle: Demand fair; trend steady; supply good; $45, truck lots, unchanged.

BLOOD MEAL

San Francisco: Demand and supply fair; $6.50 a unit of ammonia, sacked.
Chicago: Demand strong; trend up $7.50; supply fair; 80% protein $132.50, sacked.
Los Angeles: Demand slow; trend easier; supply ample; $5.25 a unit of ammonia, sacked, down 25¢.

BONE MEAL (STEAMED)

San Francisco: Demand good; supply ample; $75, sacked.
Chicago: Demand good; trend up $2.50; supply fair; $97.50, sacked.
Ft. Worth: Demand fair; trend steady; supply sufficient; domestic $100, sacked, f.o.b. Ft. Worth, unchanged.
Los Angeles: Demand fair; trend steady; supply ample; imported $80.75, 20 ton lots, sacked, unchanged.
Cincinnati: Demand good; trend strong; supply fair; $100, sacked, Cincinnati, up $5.
Denver: Demand slow; trend downward; supply ample; $117.
Buffalo: Demand very good; trend steady; supply fair; $105, sacked, unchanged.
Seattle: Demand fair; trend steady; supply good; $92, f.o.b. car Seattle, sacked, unchanged.

BREWERS DRIED GRAINS

Los Angeles: Demand good; trend unchanged; supply limited; $51.
Chicago: Demand fair; trend firm; supply ample; 26% protein $30.50@31.
San Francisco: Demand fair; supply ample; $51, sacked.
Ft. Worth: Demand slow; trend steady; supply sufficient; 26% protein $51.90, sacked, unchanged.
St. Louis: Demand fair; trend easy; supply plentiful; 26% protein $34, down $1.
Cincinnati: Demand poor; trend lower; supply adequate; $33, down $4.50.
Buffalo: Demand fair; trend lower; supply good; $42, Boston, off 50¢.

BREWERS DRIED YEAST

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12½¢ lb., l.c.l.
Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.
St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.
Los Angeles: Demand good; trend steady; supply limited; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked and unchanged.
San Francisco: Demand fair; supply good; 10¢ lb., sacked.
Ft. Worth: Demand slow; trend steady; supply sufficient; 11½¢ lb., 5 ton lots, sacked, unchanged.
Cincinnati: 9@10¢ lb., sacked.
Buffalo: Demand good; trend weaker; supply ample; $8.50 cwt., off 25¢.
Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

BUTTERMILK-CONDENSED

San Francisco: Demand fair; supply good; $5 cwt., drums.

CALCIUM CARBONATE

Los Angeles: Demand fair; trend steady; supply adequate; flour $9.35, 20 ton cars; meal $10.20, 20 ton cars; both sacked and unchanged.
Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk in boxcars $8.04; granular grind $1 premium.
Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $11.50; bulk, hopper $11; coarse grind $1 premium, delivered Minneapolis.
Ft. Worth: Demand normal; trend steady; supply sufficient; $4.50@5, f.o.b. north Texas, unchanged.
Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.
Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.
Denver: Demand and trend steady; supply ample; $12.50, carloads.

CHARCOAL

San Francisco: Demand steady; supply ample; $141, sacked.

COCONUT OIL MEAL

San Francisco: Demand fair; supply ample; trend up; solvent $52.80, expeller $69.
Portland: Demand fair; trend steady; supply adequate; 20% solvent $62.20.
Los Angeles: Demand poor; trend steady, supply moderate; copra cake $65, unchanged.
Seattle: Demand fair; trend firm; supply tight; solvent type $71, f.o.b. car Seattle, sacked, unchanged.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; trend firmer; supply limited; 3¼¢ lb., up ¼¢.
Ft. Worth: Demand fair; trend steady; supply extremely scarce; tank car, West Coast production $4.16 cwt.; dried fish solubles $146.60, unchanged.
Denver: Demand steady; trend rising; supply short; 3½¢ lb., West Coast.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $6 more)
Minneapolis: Feed $45.70, meal $76.70.
Atlanta: Feed $42.10, meal $80.10.
Birmingham: Feed $46.90, meal $77.90.
Boston: Feed $50.60, meal $81.60.
Chicago: Feed $39, meal $70.
Cleveland: Feed $47, meal $78.
Denver: Feed $49.30, meal $80.30.
Ft. Worth: Feed $47.80, meal $78.80.
Indianapolis: Feed $44.25, meal $75.25.
Kansas City: Feed $39, meal $70.
Louisville: Feed $45.55, meal $76.55.
New York: Feed $50.20, meal $81.20.
New Orleans: Feed $48, meal $80.
Norfolk: Feed $49.60, meal $80.60.
Philadelphia: Feed $49.80, meal $80.80.
St. Louis: Feed $39, meal $70.

CORN OIL MEAL

Seattle: Demand good; trend steady; supply ample; $53 car, up $2.

COTTONSEED OIL MEAL

San Francisco: Demand fair; supply ample; trend up; 41% $67.20, 44% $71.20.
Ft. Worth: Demand improved; trend stronger; supply adequate; 41% old process $58@60, f.o.b. mills Ft. Worth, $1@2 up; carlot, solvent, 2% fat added $58@59, delivered Ft. Worth, first half May, about unchanged; pellets $2 additional; hulls $14@15, up $1.50.
St. Louis: Demand good; trend firm; supply ample; solvent $61, Memphis, $3.50 higher.
Cincinnati: Demand good; trend higher; supply adequate; $67.50, up $2.50.
Los Angeles: Demand better; supply adequate; trend steady; $57, unchanged.
Portland: Demand good; trend steady; supply adequate; 41% solvent; $74.20.
Chicago: Demand good; trend very strong, up $4; supply moderate; Memphis basis: hydraulic $61.50, solvent $61.50.
Memphis: Demand good; trend steady to higher; supply ample; prime 41% protein, old process $60, up $3.50; new process, 41% protein $60, up $4.
Denver: Demand good; trend strong; supply ample; $62.50, delivered.
Atlanta: Demand good; trend stronger; supply limited; 41% $61 Georgia, $60 Mississippi, $61 Tennessee, $60 north Alabama producing mills.
Buffalo: Demand and supply fair; trend higher; $80.25, sacked, Boston, up $2.
Seattle: Demand good; trend strong; supply limited; 41% expeller $74, f.o.b. car Seattle, up $3.
Kansas City: Demand good; trend steady to higher; supply adequate; 41% solvent process $63.80, up $1; 41% old process $63.60, unchanged.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $43.50 sacked, $40.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.
Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $52, f.o.b. Tupelo in 100 lb. multiwall bags, $49 bulk.
Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.
Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18% $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.
Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $69.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $66.35 bulk ($3.65 per unit of P).
Ft. Worth: Demand fair; trend steady; supply sufficient; minimum 18½% phosphorus, maximum 31% calcium, maximum .18% fluorine $76.65, sacked, unchanged.
Cincinnati: 18% phosphorus, carlots $74.30, ton lots $84.30; 14% phosphorus, carlots $62.50, ton lots $72.50, f.o.b. Cincinnati.
Seattle: Demand and supply good; trend steady; $93.50, ex-dock Seattle, sacked.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $83, bulk, boxcar/hopper car; $86, bagged, in less than carload lots; 21% P, $94.05, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.
Chicago: Bulk, carlots and truck loads, 18½% phosphate $80 and 21% phosphate $89; packed in 100 lb. papers, 10 tons or more, 18½% phosphate $81 and 21% $92; lesser quantities, 18½% phosphate $91 and 21% $102; above prices per ton, f.o.b. Chicago Heights, Ill., or Nashville, Tenn.
Bonnie, Fla.: Minimum phosphorus 18½%, granular, $81 (or $4.38 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.
Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $81, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.
Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $75.50, sacked in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.
Ft. Worth: Demand fair; trend steady; supply adequate; $81.50, sacked, unchanged.
Los Angeles: Demand fair; trend steady; supply adequate; $95.10, sacked, unchanged.
Cincinnati: 18½% phosphorus $88.80, bagged in carloads; $98.70, bagged in ton lots, f.o.b. Cincinnati; $81, f.o.b. producing points.
Buffalo: Demand fair to good; trend steady; supply adequate; $82.93, sacked, f.o.b. warehouse, Buffalo, unchanged.
Seattle: Demand good; trend steady; supply limited; $91, ex-dock Seattle, sacked.
Denver: Demand good; trend steady; supply ample; $88.50, delivered, carloads.

DISTILLERS DRIED GRAINS

San Francisco: Demand fair; supply ample; solubles $79, sacked.
Cincinnati: Demand poor; trend steady; supply adequate; $52@53.
Buffalo: Demand fair to good; trend steady; supply fair; $57.50, Boston.
Louisville: Demand fair; trend weak; supply good; bourbon grains, dark $52, sacked and packed f.o.b. Louisville, bulk $5 less; light feed $1@2 less; solubles $73.
Seattle: Demand good; trend firm; none available; $71, delivered, truck lots, sacked, unchanged.

DRIED BEET PULP

Portland: Demand good; trend steady; supply adequate; $47.58.
San Francisco: Demand good; supply fair; $45.50.
Los Angeles: Demand and trend steady; supply ample; $44.90@45, unchanged.
Buffalo: Demand and supply fair; trend higher; $64.50, sacked, Boston, up 50¢.
Seattle: Demand good; trend steady; supply ample; $49, delivered carlots, sacked, unchanged.
Atlanta: Demand fair; trend steady; supply limited; $62.20, sacked, delivered.
Denver: Demand light; trend steady to weak; supply scarce; $60.

DRIED BUTTERMILK

Chicago: Demand quiet; trend firm; supply fair; medium acid $9.75@10.25 cwt., sweet cream $9.75@10.25 cwt., both sacked.
San Francisco: Demand fair; supply ample; 13½¢ lb., sacked.
Los Angeles: Demand fair; trend steady; supply ample; 13¾@14¢ lb., sacked, unchanged.
Buffalo: Demand poor; trend steady; supply ample; $10.55 cwt., unchanged.

DRIED CITRUS MEAL

San Francisco: Demand and supply fair; $48, sacked.
Los Angeles: Orange pulp $43, lemon pulp $43, both nominal and unchanged.
Atlanta: Demand fair; trend steady; supply good; pulp $32.50@35, meal $30, both sacked, f.o.b. Florida producing plants.
Buffalo: Demand poor; trend steady; supply adequate; $35, f.o.b. Florida, unchanged.

DRIED SKIM MILK

Los Angeles: Demand slow; trend steady; supply adequate; 14¢ lb., less than ton lots; 13¾¢ lb., ton lots; both sacked and unchanged.
Chicago: Demand moderate; trend steady; supply adequate; $10.50@10.85 cwt., sacked.
San Francisco: Demand and supply fair; 14½¢ lb., sacked.
Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.
Ft. Worth: Demand fair; trend steady; supply limited; $15.65 cwt., sacked, unchanged.
Buffalo: Demand fair; trend stronger; supply ample; spray $11.45 cwt., up 10¢.
Minneapolis: Price off 25@50¢, $11.75@12.25 cwt.

DRIED WHEY

Ft. Worth: Demand fair; trend steady; supply adequate; standard $5, sacked, truck or rail, delivered Ft. Worth; ton lots $5.25, f.o.b. warehouse, Ft. Worth, unchanged.
Los Angeles: Demand fair; trend steady; supply adequate; $5.15 cwt., carloads; $5.35 cwt., l.c.l.; both sacked and unchanged.
Chicago: Demand quiet; trend firm; supply fair; $4.50@4.85 cwt., sacked.
San Francisco: Demand steady; supply good; $5.25 cwt., sacked.
Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.
Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l., unchanged.
Kansas City: Demand fair; trend steady; supply adequate; $5 cwt., sacked, unchanged.
Minneapolis: Supply remains ample; demand good; price steady at $5.15 cwt.
Denver: Demand good; trend steady; supply ample; $5.25 cwt., Denver.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand good; trend steady; supply limited; $1 a unit protein, sacked, unchanged.
San Francisco: Demand and supply fair; $89.
Ft. Worth: Demand fair; trend steady; supply limited; 85% protein $75@77.50, unchanged.
Atlanta: Demand good; trend stronger; supply short; $75, f.o.b. Alabama and Georgia producing mills.

FISH MEAL

Portland: Demand fair; trend steady; supply adequate; $1.80 a protein unit, sacked.
Los Angeles: Demand good; trend firmer; supply light; local production, 60% protein $1.80 a unit sacked, unchanged.
San Francisco: Demand slow; trend up; supply ample; $1.75 a unit of protein.
Chicago: No quotations available; all apparently withdrawn and demand very aggressive with no offerings to fill it; Canadian herring $1.70 a unit of protein.
Ft. Worth: Demand good; trend higher; offerings extremely light; sacked: 65% protein, Peruvian, nominal $114, up $3; new crop menhaden $118, subject to catch, May-June.
Cincinnati: Demand fair; trend higher; supply adequate; $108.10, up $2.
Buffalo: Demand good; trend higher; supply limited; 60% protein menhaden $115, up $2.50.
Seattle: Demand good; trend firm; supply ample; $1.80 a unit protein, f.o.b. truck Vancouver, B.C., sacked (Canadian production), up 10¢ a unit.
Minneapolis: Demand continues good; supplies fair; 60% West Coast blended steady at $135, sacked, delivered; 70% Canadian herring, steady at $1.57½, f.o.b. West Coast, subject to production.
Denver: Demand very good; trend rising; supply short; $1.85 a protein unit, West Coast.
Atlanta: Demand good; trend stronger; supply short; 60% menhaden $110, sacked, f.o.b. East Coast, strictly subject to catch.

HOMINY FEED

Chicago: Demand good; trend strong,

up $1.50; supply fair; $38.

Los Angeles: Demand good; trend firmer; supply adequate; meal $47, pellets $49, up $1.

St. Louis: Demand fair; trend firm; supply limited; yellow $38.50, up $2.

Cincinnati: Demand poor; trend higher; supply adequate; $41.60, up $3.60.

Buffalo: Demand fair to good; trend higher; supply fair; $48, Boston, up $3.50.

Kansas City: Demand fair; trend steady; supply of spot tight; white or yellow $33 @34, up $1.

Seattle: Demand good; trend steady; supply limited; $52, delivered carlots, sacked, up $1.

LINSEED OIL MEAL

Los Angeles: Demand slow; trend steady; supply limited; local production, 31% protein $71, unchanged.

Chicago: Demand good; trend strong, up $1@1.50; supply moderate; Minneapolis basis: solvent $56.50, expeller $61.50.

Portland: Demand slow; trend steady; supply ample; 34% solvent $85, sacked.

Ft. Worth: Demand slow; trend steady; supply sufficient; 34% protein, extracted $70.20, $71.20 last half May-June, 50¢ higher.

San Francisco: Demand fair; supply ample; $72.

Cincinnati: Demand poor; trend steady; supply adequate; new process $55.50, old process $60.50, Minneapolis.

Minneapolis: Demand stronger; supplies adequate; trend 50¢@$1 higher; 34% solvent advanced from $55.50 to $56.50; 32% expeller advanced from $60.50 to $61.

Denver: Demand fair; trend steady; supply ample; $70, Denver.

Buffalo: Demand and supply fair; trend higher; $56.50, f.o.b. Minneapolis, up $1.

Seattle: Demand fair; trend steady; supply good; 34% protein (Montana) $85, delivered carloads, sacked, unchanged.

MEAT AND BONE MEAL

Los Angeles: Demand good; trend firm; supply tight; 50% protein $1.90 a unit, unchanged.

Portland: Demand slow; trend lower; supply ample; 50% $102.50, sacked.

San Francisco: Demand good; trend unchanged; supply fair; $1.85 a unit of protein.

Chicago: Demand good; trend up $7.50; supply fair; 50% protein $97.50, sacked.

Ft. Worth: Demand good; trend strong; supply moderate; meat and bone, 50% $95 bulk, $97.50 sacked, f.o.b. Ft. Worth, up $5.

Cincinnati: Demand good; trend strong; supply short; 50% meat and bone scraps $92.50, Cincinnati, up $1.50.

St. Louis: Demand good; trend firm; supply limited; 50% $95, up $2.50.

Memphis: Demand slowed slightly; trend steady; supply ample; 50% protein $97, without billing, up $4.50; 50% protein $102, with rail transit, up $6.

St. Paul: Demand heavy; supplies poor; prices jumped from a $94@97 sacked price to $107@112.

Denver: Demand good; trend strong; supply scarce; $89, Denver.

Buffalo: Demand good; trend very firm; supply very limited; 50% meat scraps $95, up $5.

Kansas City: Demand good; trend firm; supply tight; 50% $100, up $7.50.

Seattle: Demand fair; trend steady; supply limited; $2.05 a unit protein, ex-processing plant, sacked, unchanged.

MEXICAN PHOSPHATE

Brownsville, Texas: Mexican natural ground rock, 13% phosphorus $29 sacked, bulk $2 less; 14% $43 sacked, bulk $2 less.

MILLFEED

Minneapolis: Demand and supplies good; sacked bran steady at $43.50, bulk $5 less; sacked middlings steady at $42.50; sacked red dog up $1 at $46.

Kansas City: Demand fairly good; trend steady; supply available; sacked bran $41@41.50, up $1; sacked shorts $41@41.50, up 50¢; bulk bran $34.50@35, up $1.50; bulk shorts $35.50@36, up $1; bulk middlings $35.50@36, up $1.

Ft. Worth: Demand good; trend higher; offerings light; bran, bulk $43, burlaps $49; gray shorts, bulk $45, burlaps $49.50; bulk middlings $44.50, delivered Texas common points, $2 up on bulk bran, $1.50 up on sacked bran, $3 up on bulk shorts; 50¢ up on sacked shorts and $2.50 higher on middlings.

Chicago: Demand fair; trend slightly higher, up 50¢; supply adequate; standard bran $40.50, standard midds. $41.50, red dog $43.50.

St. Louis: Demand good; trend firm; supply limited; sacked bran $46, shorts $46, up $2; bulk bran $39, middlings $40, up $2.

Cincinnati: Demand fair; trend higher; supply adequate; bran $47, middlings $48, both up $3.

Buffalo: Demand fair to good; trend higher; supply adequate; bran $43.50, bulk, up $1.50; middlings $45, bulk, up $1.50; red dog $53, sacked, up $2; all f.o.b. Buffalo.

Memphis: Demand fair; trend steady to lower; supply ample; wheat bran $41.50, up $1.70; gray shorts $43.80, up $3.80; standard midds. $42.80, up $2.80.

Seattle: Demand fair; trend firm; supply ample; $39, delivered common transit points, carlots, unchanged.

Portland: Demand slow; trend easier; supply tight but adequate; $37@38.

Denver: Demand and trend steady; supply limited; shorts, bran, millrun, all $44.75.

San Francisco: Demand good; supply fair; millfeed $43, red bran $48.50.

Los Angeles: Standard millrun $44, improved demand, firm trend, moderate supply, market unchanged; red bran $52.50@53.50, slow demand, firmer trend, ample supplies, market up $2.50@3.50.

MINERAL FEED

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.

MOLASSES

San Francisco: Demand and supply good; $25.75, f.o.b. cars Richmond, Cal.

St. Louis: Demand fair; trend steady; supply ample; blackstrap 14¢ gal., tank cars, New Orleans, unchanged.

Los Angeles: Demand good; trend steady; supply limited; $25.50, f.o.b. tank cars; $25.75, f.o.b. tank trucks; both unchanged.

Ft. Worth: Demand slow; trend steady; supply sufficient; blackstrap 14¼¢ gal., f.o.b. Houston; truck $31.07, delivered Ft. Worth, seller's market price on date of shipment, unchanged.

Cincinnati: Demand fair; trend steady;

(Turn to **QUOTES**, page 82)

Major Markets Roundup

Soybean Meal, Animal Proteins Lead Advance

Soybean meal and animal proteins led a generally stronger trend in the ingredient market this week. The only two major ingredients with lower prices were distillers dried grains and brewers dried grains.

The accompanying table of average national price changes from April 18 to April 25 shows a gain of $2.80 for soybean oil meal, a $4.05 advance for tankage and a $1.70 advance for meat and bone meal. Some of the local markets noted even greater advances in these commodities later in the week.

Ingredients showing strength in some of the markets were cottonseed meal, which is being substituted for soybean meal in many rations, fish meal and millfeeds.

Demand was generally good through the various areas of the country.

East

BUFFALO: Soybeans again dominated a strong ingredient market this week.

Soybean oil meal (44% and 50%) rose $4 during the week and the strength swept a number of other ingredients up with them, notably gluten feed, up $2; hominy feed, up $3.50; meat scraps, up $5, and fish meal, up $2.50.

Most grains advanced, with corn gaining 4¢, oats rising 2¢ and barley edging up 1¢. Feed wheat held steady.

Cottonseed oil meal is beginning to attract attention and prices moved up $2. Linseed oil meal made a further gain of $1.

Brewers grains, however, lacked appeal, and backed down 50¢. Distillers grains, at present, are practically out of the picture. Alfalfa meal held steady.

Millfeeds worked higher, with bran rising $1.50, middlings gaining $1.50 and red dog advancing $2. Big mixers dropped out of the market and medium mixers and the country trade came in to take up the slack. Shipping positions remained tight. Bran could fade quickly if drying winds condition wet pastures.

Feeds: Average Bulk Prices and Index of Weighted Prices*
(Dollars per ton)

	April 25, 1961	April 18, 1961	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	86.05	83.25	+2.80
Cottonseed meal	61.55	60.25	+1.30
Linseed meal	64.35	63.70	+ .65
Copra cake or meal.	58.50	58.50	...
Peanut meal	58.00	54.00	+4.00
Index	101.1	98.2	+2.9
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	93.05	91.35	+1.70
Tankage	93.65	89.60	+4.05
Fish meal	103.50	103.50	...
Index	82.1	80.7	+1.4
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	50.55	50.55	...
Dist. dried grains	54.70	55.70	—1.00
Brewers dried grains.	38.00	39.60	—1.60
Index	77.6	78.2	— .6
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	43.35	41.40	+1.95
Midds. and shorts	44.00	41.70	+2.30
Index	78.9	75.1	+3.8
OTHER MILLFEEDS:			
Prices at prin. mkts.:			
Hominy feed	40.60	38.50	+2.10
Rice bran	30.00	29.00	+1.00
Index	62.6	59.5	+3.1
ALFALFA MEAL			
Prices at prin. mkts..	50.90	50.85	+ .05
Index	98.0	97.9	+ .1
MOLASSES, FEEDING			
Prices at prin. mkts..	27.76	27.76	...
Index	82.6	82.6	...
ALL FEEDSTUFFS			
Index	89.9	87.7	+2.2
FEED GRAINS			
Prices at prin. mkts.:			
Corn	39.00	37.00	+2.00
Oats	43.80	42.90	+ .90
Barley	41.90	41.40	+ .50
Grain sorghums	38.30	37.00	+1.30
Index	63.6	60.6	+3.0

*Base period of index is 1947-49.
Source: USDA.

Midwest

CINCINNATI: The local ingredient market was anything but static during the last week, with several of the ingredients gyrating widely in upward moves.

The only two ingredients for which lower prices were reported were alfalfa meal, down 50¢, and brewers dried grains, down a substantial $4.50, following a decline of $2.50 a week earlier.

Price increases included: Bone meal, $5; meat scraps, $1.50; cottonseed oil meal, $2.50; fish meal, $2; hominy feed, $3.60; millfeeds, $3, and soybean oil meal, $4.

Despite the upward market trend, which might be considered a sales deterrent, ingredient brokers were encouraged this week by the steadily increasing demand for their products. They also were encouraged by the over-all business climate in this area, which, they are convinced will react favorably for the feed industry during the coming weeks.

CHICAGO: After having backed down very sharply at the start of the week preceding, largely as a reflection of the sharp selloff in soybeans themselves, soybean oil meal did still another "U turn" this week and both the cash commodity and the Chicago futures moved well into brand new high ground for the season. Volume of pit trade was tremendous on occasion. During the Tuesday session of the current week, there were 4,070 lots of 100 tons each traded which is of course an all-time high record for any one day.

Cash meal, Decatur basis, 44% protein, unrestricted billing advanced to $78 per ton—up $3 for the week and ETL billing moved from $72.50 up to $75. On 50% protein, carrying unrestricted billing, the current price is $88—up $4 for the week while that with ETL billing, was quoted $3.50 higher for the week at $85 ton.

Bean meal production during March, according to the Census Bureau, was 801,700 tons—about 20,000 tons greater than in March a year ago. Compared with the previous month, it was about 18,000 tons larger. Stocks of meal in processors' hands the end of March at 178,400 tons were about 15,000 more than a month earlier—in other words, a very small dent was made during March in the stockpile of meal in the possession of crushers. Incidentally, it is much larger than a year ago when the total was only 85,900 tons.

ST. LOUIS: The feed ingredient market was unchanged to higher. Trading volume was rather light with buyers covering needs for a week or 10 days ahead. Forward interest was lacking.

The outstanding feature was the advance of soybean meal to a new season high, brought on by publication of the report of soybean stocks in all positions. At 264 million bushels, a figure about 15 million less than expectation, it suggests that a tight situation lies ahead for soybean meal. The question in the minds of buyers now is how far the market has already moved to discount the situation.

Cottonseed meal was in better demand, principally because a price advantage encouraged substitution. Mixers were friendly to animal proteins, too, and upturns in meat and bone meal were again recorded. Offerings were on a smaller scale. Alfalfa meal met a slow trade. Buyers held down purchases, anticipating new crop arrivals within a few days.

MINNEAPOLIS-ST. PAUL: Soybeans still held the spotlight of the market.

Soybean meal moved up $1.50 to $2.50 following announcement by the U.S. Department of Agriculture that soybean stocks totaled 264 million bushels April 1 as compared with 308 million in all positions a year earlier.

Meat and bone meal and tankage continued their advances to even higher levels. Meat and bone meal was priced at $107-112 as compared with $94-97 a week earlier and tankage had advanced from $93-96 to $105-110.

Animal fat backed off another ⅛¢ from its high of 8¢ two weeks ago.

Oat product prices advanced 50¢ to $2 under increased demand.

The alfalfa meal market has not changed a great deal in the local area. Some traders said that there was an easier tone at some of the markets. Cold spring weather is delaying production of new crop meal.

South

MEMPHIS: The price structure of ingredients was generally higher here the last week, with a fair to good demand prevailing.

Soybean oil meal rose the limit Tuesday, following the bullish report a day earlier on soybean stocks in all positions. Soybeans traded up the limit and, with firmness indicated, this strength was transmitted to soybean oil meal. Sellers were offering soybean oil meal for nearby shipment, but were reluctant to do so for forward delivery, except at a considerable premium over the nearby.

Cottonseed oil meal, influenced by the upswing in beans and soybean oil meal, as well as improved demand, also moved higher. Where possible, cottonseed oil meal is being substituted for soybean oil meal, due to the big spread in prices favoring the latter.

Blackstrap molasses is entering its slow season, yet a price firming appears ahead, because of the uncertainty in Cuba, dealers reported.

Animal Proteins

Export demand for animal fats slowed, causing a slight drop in prices of tallow and greases. The consensus is that this is only a temporary situation.

In the past month, use of meat and bone meal has been much greater. However, buying has eased the last few days here because of the rapid price advance.

Poultry by-products also moved up very fast; yet, they are still in good demand. The supplies are rather tight just now.

New crop alfalfa meal production

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started the week of April 17 in Tennessee, Arkansas and Missouri, with the demand good and quality very good, running high in protein and vitamin A.

Millfeeds, probably in sympathy with the upturn in grains and proteins, were quoted higher than a week earlier. Buyers were taking only nearby offerings.

Oilseed Meal Futures

Oilseed meal futures clinched a strong rise for the week on the Memphis Board of Trade with the strength Tuesday.

Soybean oil meal moved sharply upward, to the limit in some instances, influenced by the exceptional strength in soybean futures. Cottonseed oil meal, considerably behind soybean oil meal, followed the advance.

Eastern Trunk Line soybean oil meal closed Tuesday $4 per ton higher than April 18, unrestricted soybean oil meal $1 to $2 higher, and bulk solvent cottonseed oil meal $2 to $5 higher.

Trading volume for the week amounted to 3,500 tons of unrestricted soybean oil meal and 200 tons of bulk solvent cottonseed oil meal.

LOUISVILLE, KY.: Demand for distillers dried grains has held up exceptionally well, despite relatively large production. No surpluses or unsold production reported on track at Buffalo, New York or Boston. Supply is given as fully adequate, but not in excess, due in part to the high protein content of distillers dried grains and presently good markets on soybean meal and some other high protein products, all of which apparently are holding very firm.

Distillers as a whole have been running rather heavily and continuing to overproduce.

Recent reductions brought the price of distillers dried grains down to a level of $55 ton, bulk Boston or $47 bulk Louisville. Distillers dried solubles, which have not changed in years, remain at $73 ton, sacked and packed Louisville.

Production will ease off in late May and early June, with production very small during July, August and the first half of September. Hot weather and shortages of water in some areas for condensation of distilled vapors and for setting fermenters and yeast tubs always cut production to a walk.

Prices should continue steady over May. They may ease off, should soybean meal or other high proteins show signs of easing.

Southwest

FT. WORTH: Led by soybean meal, which was up $5-$7, all protein feed ingredients were higher. Demand for cottonseed meal and hulls was slightly improved and quotations were $1-$2 up. Packinghouse by-products were stronger with meat and bone meal up $5 and tankage $2.50 up. Bulk millfeed was tight and up $2-$3 and sacked 50¢-$1.50 higher. Fish meal was very scarce and $3 higher.

Most other ingredients were unchanged with the exception of dehydrated alfalfa meal which was quoted $1 lower; prime tallow, as well as animal and vegetable fat, hydrolyzed, were off ¼¢ lb.

Feed grains were higher, corn up 5¢ and oats 3¢ bu., and grain sorghums up 5¢ cwt.

West

SEATTLE: Corn was on the firm side, advancing to $52.50. Barley and oats were unchanged with very little demand. Milo followed corn, advancing about $2 ton to $48.50.

MILLFEED • FEED GRAIN
FEED INGREDIENTS
What Do You Need?
—Jerry Parks
633 Board of Trade
KANSAS CITY, MISSOURI

Soybean oil meal leveled off at about $98.70 ton bulk delivered to coast points. Linseed oil meal and copra meal remained unchanged once again. Cottonseed meal ranged higher as supplies tightened. Expeller meal was offered at $75 ton bulk into Washington points. Solvent was $76 and 46% solvent $84. Fish meal was strong once again with offerings of Canadian herring meal up 5¢ unit of protein and was being quoted at $1.80 unit Vancouver, B.C. Meat meal was unchanged at $2.05 unit but remained in tight supply.

PORTLAND: Pacific Northwest feed ingredient markets followed a mixed trend during the trading period and appeared somewhat unsettled at the close.

Many trade sources were of the opinion that trading averaged slower with a narrow demand mostly for spot or prompt shipment offerings. Soybean meal listings closed $3 to $4 ton higher as a reflection of climbing futures markets which were blamed upon the unsettled world situation, along with the fact that there were fewer soybean stocks in all positions. Other oil seed quotations ruled unchanged with a mostly steady undertone.

Animal protein values averaged lower with meat meal trading at $1 ton lower listing.

Wheat millfeed prices were barely unchanged to 50¢ ton lower during slow trading, while alfalfa meal values appeared steady with good quality offerings considered to be on the light side.

Values for whole feeding grains were fully steady to higher with corn quotes advancing as much as $3 ton and grain sorghums finishing the week $1.50 to $1.75 ton higher. Other feed grain listings held unchanged throughout the period.

SAN FRANCISCO: The feedstuffs market here closed on the stronger side. Fish meal was in tight supply and prices were up 7½¢ per unit.

Millfeed was up slightly as the mills held for higher prices. Cottonseed meal advanced $3 per ton with mills and resellers withdrawing from the market. With the sharp advance in soybean meal, most buyers are on a "hand-to-mouth" basis, making for a slow trading affair.

Other Reports

MOLASSES: The U.S. Department of Agriculture reports that markets for feeding cane molasses were generally steady during the week ended April 25.

Demand was slow to moderate. Some forward sales in the East were made through June at current prices, but most offerings and inquiries were for immediate needs only. New Orleans prices were unchanged to ¼¢ higher at 14¢ gal. Memphis prices advanced ¼¢. However, prices at Minneapolis declined 6/10¢ and prices at Chicago were ¼ to 6/10¢ gal. lower. Other markets were mostly unchanged.

Puerto Rican blackstrap producers have sold about 3.2 million gallons of 1961 crop molasses, 86 degrees Brix. Sale was to Puerto Rican distributors with half at 12.2¢ and half at 12.5¢ f.o.b. Puerto Rican port.

Florida sugar cane grinding mills have completed operations for this season, the USDA report said. Total cane ground through March 27 was 1,497,616 tons. Raw sugar made amounted to 143,092 tons.

ALFALFA MEAL: Annual production of about 1,220,000 tons of dehydrated alfalfa meal and disappearance of "within at least" 15,000 tons of that figure was predicted this week by the American Dehydrators Assn.

The March alfalfa meal production report of the U.S. Department of Agriculture shows stocks on hand at the end of the month at 139,600 tons —31,700 tons greater than a year earlier. ADA says of this, "For the fifth month in a row, the excess over previous years has diminished.

"Production for the 11 months is at an all-time high of 1,197,000 tons. This is 50,200 tons greater than last year, which was our largest production at that time and is 112,100 tons greater than the five-year average."

ADA's bulletin continued: "Disappearance, which we calculate from USDA figures is also at an all-time high at 1,132,600 tons. This exceeds last year by 57,000 tons; exceeds our biggest year by 31,700 tons, and is 95,100 tons greater than the five-year average."

The dehy meal inventory on March 31 was 139,600 tons against last year's 107,900 tons.

FISH MEAL: In an effort to stabilize the supply, demand and prices of fish meal for animal feed, Japan has plans for fixing the price range—the top of about $155.56 per metric ton, and the bottom at about $127.78.

Fishing Industry Weekly reports that should domestic fish meal prices exceed the established upper price limit for a period of over a month, Japan will determine the amount of foreign meal to be imported and will fix the time and means of importation. However, imported foreign meal must not be sold for less than the lower price limit of domestic fish meal.

Japan's export price is to be based on "the price of foreign fishmeal imports—$136.11 a metric ton for meal with protein content over 60%, delivery at Japanese port."

The Belgian Ministries of Agriculture and Economic Affairs have issued a decree levying duties on the importation of fish meal and feedstuffs containing fish meal. For fish meal and powder the duty is $36.29 ton. For feeds containing fish meal or powder the duty ranges from $3.63 to $36.29 ton, depending on the protein content of the feed.

In addition to these import duties, there is also a sales tax of 8% on fish meal and 5% on feeds containing fish meal.

These duties were levied, says the U.S. Consulate at Antwerp, "to protect the Belgian fish meal industry against alleged dumping practices of the Peruvian fish meal industry."

QUOTES

(Continued from page 81)

supply adequate; 14@14⅛¢ gal., New Orleans.

Memphis: Demand fair; trend firm; supply ample; blackstrap 14¢ gal., tank car, f.o.b. New Orleans, unchanged; $31 ton, delivered Memphis, truck, unchanged.

Buffalo: Demand good; trend steady; supply adequate; 16⅛¢ gal., f.o.b. Albany, unchanged.

Kansas City: Demand fair; trend firm; supply tight; blackstrap 14¢ gal., f.o.b. New Orleans, unchanged.

Seattle: Demand and supply good; trend firm; $25.75, f.o.b. Seattle, tank truck lots, unchanged.

Atlanta: Demand good; trend stronger; supply limited; citrus $22, f.o.b. Florida processing plants.

Denver: Demand fair; trend steady; supply ample; $33.60, tank car, Denver.

Minneapolis: Market unchanged; blackstrap $35, tank truck, delivered; beet $31, blend $33.

OAT PRODUCTS

Chicago: Demand good; trend strong, up $1; supply light; reground oat feed $12; No. 1 fine ground feeding oatmeal $66; feeding rolled oats $70.

St. Louis: Demand fair; trend firm; supply ample; white pulverized $42, up $1; reground oat feed $13, unchanged.

Ft. Worth: Demand slow; trend steady; supply sufficient; 10% protein oat millfeed $41.80, down 50¢; reground $21.30, sacked, unchanged.

Minneapolis: Prices increased early in the week with increased demand and steady supply; sacked feeding rolled, up from $74 to $76; sacked feeding oatmeal, up from $61 to $62.50; sacked pulverized, up from $41 to $41.50; sacked crimped, up from $58 to $59.50; sacked oat feed, steady at $20, with nominal offerings.

Buffalo: Demand and supply fair; trend higher; $26.50, sacked, Boston, up $1.75.

Kansas City: Demand good; trend steady; supply adequate; oat mill by-products $14@15, sacked, unchanged; feeding rolled oats $67@70, sacked, unchanged.

Seattle: Demand and supply fair; trend steady; $56, delivered, truck lots, 38 lb. or better, unchanged.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $44 @50.

OYSTER SHELL

San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.

PEANUT OIL MEAL

Los Angeles: Demand good; trend steady; supply limited; $80.50, sacked, unchanged.

Atlanta: Demand good; trend stronger; supply limited; 45% $57 for solvent, $59 for expeller, f.o.b. Alabama and Georgia producing mills.

PEAT MOSS

San Francisco: Demand and supply fair; $3.65 a bale.

POULTRY BY-PRODUCTS

Los Angeles: Demand good; trend firmer; supply limited; $1.70 a unit of protein, sacked, up 5¢.

Ft. Worth: Demand fair; trend higher; supply very scarce; $92.50, sacked, f.o.b. north Texas plants, up $2.50.

Memphis: Demand good; trend steady; supply barely adequate; 55% meal $103, with billing, up $5.50; 55% meal $100, without billing, up $3.

Atlanta: Demand good; trend stronger; supply short; meat meal $90, f.o.b. Alabama and Georgia processing plants.

RICE BY-PRODUCTS

San Francisco: Demand good; trend down; supply ample; bran $40, sacked.

Ft. Worth: Demand fair; trend steady; supply scarce; rice bran $33@34, f.o.b. south Texas rice mills, sacked, up $1; hulls $5, sacked, unchanged.

Los Angeles: Demand slow; trend unchanged; supply limited; California production, high fat content, bran $50, sacked, unchanged.

Atlanta: Demand fair; trend steady; supply good; bran $42, sacked, delivered.

Buffalo: Demand fair; trend stronger; supply ample; $51.10, Boston, up 50¢.

SCREENINGS

Chicago: Demand fair; trend steady; supply moderate; ground grain $31.50; Canadian $26, sacked.

Los Angeles: Demand slow; trend steady; supply limited; barley $35, unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; $15@16, Cincinnati.

Minneapolis: Demand and supply continue fair; Canadian off $1 at $14 under pressure of opening of spring navigation season; domestic lights steady at $1@8; domestic mediums steady at $10@18; domestic heavies steady at $18@26; 15% flax screenings steady at $36.

Buffalo: Demand fair; trend steady; supply adequate; ground, sacked $20, unchanged, New York, lake and rail; unground $24, unchanged, New York.

SOFT PHOSPHATE
(Sacked, delivered)

Atlanta: $20.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $25.07.
Memphis: $22.25.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.32.

SOYBEAN OIL MEAL

Memphis: Demand poor; trend higher; supply ample; prime 44% solvent $80, f.o.b. Memphis, up $3.

Portland: Demand slow; trend higher; supply tight; 44% $99.60, 50% $106.60.

Chicago: Demand good; trend sharply higher, up $3@4; supply liberal; Decatur basis, 44% protein, unrestricted billing $78 and E.T.L. $75; 50% protein, unrestricted $88 and E.T.L. $85.

Los Angeles: Demand slow; trend very firm; supply adequate; $99.60, nominal, up $5@7.

San Francisco: Demand fair; supply ample; $96.10.

St. Louis: Demand good; trend firm; supply ample; 44% $78, up $4; 50% $88, up $3.

Ft. Worth: Demand fair; trend strong; supply sufficient; 44% $87.70, May, up $5.20; 50% $97.70, May, up $6.70.

Cincinnati: Demand good; trend higher; supply adequate; $78@80, Decatur, up $4.

Denver: Demand good; trend strong; supply ample; $91.

Atlanta: Demand and supply good; trend steady; 44% $85.50, delivered.

Minneapolis: Prices advanced $1.50@2.50 under strong demand; 44% was up from $69.50 to $71, Decatur; 50% advanced from $76.50 to $79.

Buffalo: Demand and supply fair; trend higher; $76, Decatur, up $4.

Kansas City: Demand fair; trend stronger; supply ample; 44% solvent process $75.50@76, Decatur, up $3.

Seattle: Demand fair; trend strong; supply ample; $98, delivered carlots, up $2.

TANKAGE

Chicago: Demand excellent; trend up $7.50; supply moderate; 60% protein $100, sacked.

Ft. Worth: Demand good; trend strong; supply moderate; 60% digester $97.50, sacked, Ft. Worth, up $2.50.

Cincinnati: Demand good; trend strong; supply short; 60% digester $95, Cincinnati.

Kansas City: Demand good; trend firm; supply tight; 60% digester $100, up $7.50.

St. Paul: Demand heavy; supplies poor; prices jumped from the $93@96 level of last week to $105@110.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b., freight equalized with nearest producing plant; bulk $96.

Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.

Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.

LaPlatte, Neb., and South Point, Ohio: Minimum 42% nitrogen, 262% protein equivalent, $100 ton, f.o.b. bagged; $96 ton, bulk, cars or trucks, freight equalized with nearest producing point.

Lima, Ohio: Minimum 42% nitrogen, 262% protein equivalent $95, f.o.b., bagged.

Cincinnati: Minimum 42% nitrogen, 262% protein equivalent, carloads or truck loads $100, delivered, bagged; less than carloads or truck loads $113.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Los Angeles: Demand slow; trend easier; supply adequate; 7¾¢ lb., down ¼¢.

Ft. Worth: Demand excellent; trend easier; supply limited; 7¾¢ lb., f.o.b. north central Texas, down ¼¢ lb.

RETIRED MANAGER DIES

GREAT FALLS, MONT.—John L. Erickson, 67, retired manager of the Montana holdings of General Mills, died April 17 of a cerebral hemorrhage. The native of Litchfield, Minn., came here in 1920, when he began work with General Mills. He retired 2½ years ago.

Dr. George A. Young Given Animal Health Institute's Award

WASHINGTON — Dr. George A. Young, chairman of the department of veterinary science at the University of Nebraska, Lincoln, is the recipient of the fifth annual Distinguished Service Research Award of the Animal Health Institute. The award was announced at the AHI annual meeting.

His work in the development of specific pathogen free swine techniques was the basis of the award. Dr. Young was present to accept a bronze plaque commemorating the award, and a check for $1,000, from the institute. Dr. Guy A. Railsback, president of the organization, made the presentation.

The award is presented each year to "publicly proclaim American agriculture's debt of gratitude to scientists in the field of animal health and nutrition and to honor a member of the scientific fraternity who has particularly distinguished himself in this area of service within the current five-year period."

Dr. Young was the developer of isolation equipment to control the biological environment of baby pigs taken from the sow at birth in sterile canvas bags. Pigs so taken by this method were to be used as an experimental host in the study of swine diseases.

An extension of this work was his idea for swine repopulation by placing pigs obtained this way on farms in an attempt to control chronic respiratory and enteric infections. Observers report that pigs handled in this manner have fared exceptionally well on Nebraska farms.

Dr. Young recently was selected as 1960 "Veterinarian of the Year" by the Nebraska State Veterinary Medical Assn.

ANIMAL HEALTH

(Continued from page 1)

are disease problems that did not concern anybody when farm flocks roamed the wide open spaces and when cattle followed comparatively solitary trails over the pastures," he said.

"When we crowd animals and birds, diseases and parasites can spread with great rapidity. Watching our trends in animal agriculture today, we can also see that the farm animals in our future will be of increasingly superior and costly genetic stock. Each animal will be worth a lot more. And so, disease among these valuable animals is going to be more costly."

Because of the interrelationship of animal diseases and some human afflictions, Dr. Aldrich suggested the training of animal health specialists in the U.S.

"In this seething world, it may well be the better part of realism for us to assume that we have an obligation and to speed our programs to help these people," he said. "It may mean the training of many hundreds of people, often of limited scientific background, from those countries where animal health knowledge is a critical need. We will need to take people trained in other countries and give them more training, some to the extent of our Ph.D. programs. And others, without the background for that high-level training, should have special programs to meet their needs."

Dr. Aldrich suggested that if each of the 18 veterinary medical schools in the U.S. could each train six animal health specialists per year, it would "give our new or underdeveloped nations the leadership needed to raise their health standards."

FDA Regulations Explained

An explanation or clarification of the Food and Drug Administration's regulations as they apply to feed additives or medicaments was given to the AHI members by Winton B. Rankin, assistant commissioner of FDA, in an address, "FDA, Industry and Modern Technology."

The purpose of the new drug section of the Pure Food and Drug Law, he said, "Is to see that a new drug gets into the hands of the ultimate user, in such form and with such labeling that he can employ it safely. If a feed concentrate requires special manufacturing and laboratory control when used in the feed mill to insure the production of a commercial feed that is safe, a new drug application is required covering the use of the concentrate by the specific mill.

"Most of the new drug concentrates on the market today are in this group. But if the feed concentrate can be used safely by feed mixers according to label directions without the need of special manufacturing or laboratory controls to insure safety, then no new drug application is required from feed mills," he said.

Mr. Rankin said that FDA officials "believe there is no valid basis for considering a change in the basic principle of the anticancer clause (in the food and drug regulations) until science makes a breakthrough in this area." Conversely, "there is no public health reason for having the anticancer clause apply to a product for use in the animal feed where use of the chemical does not harm treated animals and where it does not leave a residue in man's food derived from treated animals."

"If the law were amended to remain applicable under such conditions, this would take care of some of the questions that you have raised," Mr. Rankin stated.

He said that the Department of Health, Education and Welfare was considering whether to submit a bill to Congress that would amend the law in this way.

"Of course, the industry doesn't have to wait," he added. "It can draft its own bill if it wishes."

AHI Officers

J. E. McCabe, director of the agricultural products department, Merck & Co., Rahway, N.J., was elected president of the Animal Health Institute. He succeeds Dr. Guy A. Railsback, Cutter Laboratories, Berkeley, Cal.

Other officers named at the meeting include C. D. Siverd, American Cyanamid Co., New York, first vice president; George L. Varnes, Eli Lilly & Co., Indianapolis, second vice president, and John O. Gwin, Armour Pharmaceuticals, Chicago, treasurer. D. L. Bruner was reappointed to the post of executive secretary of the association.

Newly elected members of the board of directors are Vernon Dawe, Dawe's Laboratories, Chicago; Robert F. Dee, Smith, Kline & French, Philadelphia; Harold C. Hansen, Diamond Laboratories, Inc., Des Moines, Iowa; D. A. Peterson, Fort Dodge (Iowa) Laboratories; Kenneth T. White, Schering Corp., Madison, Wis., and Dr. Herbert S. Wilgus, Ray Ewing Co., Pasadena, Cal.

Dr. Railsback, immediate past president of the association, becomes an ex-officio member of the board of directors.

LEAVING FOR LAS VEGAS—Mr. and Mrs. James Buller, Buller Feed Mills, Halstead, Kansas, are pictured here receiving their tickets and hotel reservations from Larry Alley, president, Midwest Feed Manufacturers Assn., and Lloyd S. Larson, executive vice president, MFMA. Mr. Buller won the trip to Las Vegas at the recent Midwest convention in Kansas City.

Sales Decline

NORTH CHICAGO—Abbott Laboratories sales for the first quarter of 1961 declined 6.2% and earnings were down 21.9% from the comparable period last year, it was announced by George R. Cain, president.

World-wide sales were $34,043,000, off from the record high $36,284,000 in the 1960 first quarter. Earnings dropped to $3,523,000 from $4,511,000 last year. First quarter earnings were equivalent, after payment of preferred dividends, to 90¢ a common share this year, compared with $1.16 a share in the 1960 period.

Domestically, lower antibiotics prices and intensified competition in the vitamin market were factors in the declines from the first quarter of 1960, Mr. Cain said.

PLACEMENTS FOR SUPPLY FLOCKS UP

WASHINGTON — Domestic placements of pullet chicks for broiler hatchery supply flocks by leading primary breeders totaled 3,685,000 chicks during March, the U.S. Department of Agriculture reports. This was 38% more than in March, 1960, and 15% more than in March, 1959.

The 38% increase in March follows percentage increases of 25 and 22% in January and February, respectively.

Total March placements (domestic plus exports) were reported at 4,158,000, compared to 2,946,000 a year earlier and 3,450,000 in March, 1959.

The placement data include pullet chicks sold during the month, plus the number of pullet chicks expected from eggs sold during the preceding month. The conversion from eggs to expected pullet chicks was made on the basis of 125 pullet chicks per case of hatching eggs sold. The primary breeders included in this report account for a very large percentage of total supply of replacement pullets for broiler hatchery supply flocks. Sales of replacement pullets by these breeders provide an indication of the potential number of pullets available for addition to hatchery egg supply flocks several months before the pullets will actually move into the flocks.

FREEMAN

(Continued from page 1)

said. "The reports are preliminary, but in the predominant feed grain area, they indicate that the sign-up should range from 60 to 80% of the farmers in such states.

"In these areas, in addition, the large corn producers have been signing up to put the maximum 40% of their acreage in the plan."

The Secretary predicted that the results of the program will be interpreted by urban congressmen who supported the program as an indication that farmers are willing to cooperate with one another in voluntary programs.

Mr. Freeman noted that reports from southeastern and midwestern states anticipated signups of from 50-60% of all farmers in Illinois, from 60-70% in Iowa, up to 75% in North Carolina, about 50% in Kentucky, up to 80% in South Dakota and up to 90% in parts of Nebraska.

PRICES

(Continued from page 1)

to the great number of broilers on feed."

Broiler growers are hurting because of higher feed ingredient prices and declining broiler prices. The quote in the Southeast at week's end was about 13½¢ lb., f.o.b. the farm.

"It is rumored that the losses some are having to take are causing them to take bankruptcy and many are predicting that broilers may get as low as 12¢ lb.," the same spokesman commented. "Some commercial hatcheries are placing their eggs on the open market at reduced prices."

The U.S. Department of Agriculture said live prices of broilers in major southern producing states had dipped half a cent during the week to mostly 13½¢. This marked the fourth consecutive week of declining values.

In Delmarva, however, prices held relatively steady and averaged approximately 14½¢.

Egg Prices Up

The week's egg price developments weren't so dim, however. USDA said prices throughout the nation were ½-2½¢ doz. higher than a week earlier. Although offerings in the Northeast were liberal, supplies were lighter from midwestern areas.

In the Southeast and on the Pacific Coast supplies were ample.

Terminal market prices of turkey hens and fryer-roasters remained mostly unchanged during the week ended April 27, but tom prices continued in a downward trend—unchanged to 2½¢ lower, mainly on the heavier sizes.

PURDUE

(Continued from page 1)

stances and a steroid compound to fattening steers.

—Alfalfa hay vs. alfalfa haylage vs. alfalfa silage, with and without supplement.

—Comparative value of mature and over-mature corn silage, alfalfa hay, two types of alfalfa haylage and alfalfa silage for growing calves.

—Lysine, methionine and trace mineral additions to a high-urea supplement for fattening cattle.

Summaries of the research reports follow:

1. LEVELS OF SUPPLEMENTAL VITAMIN A FOR FATTENING BEEF STEERS—W. M. Beeson, T. W. Perry, M. T. Mohler and W. H. Smith — A basal ration of 8 parts ground ear corn to 1 part soybean oil meal plus minerals was self-fed to fattening cattle. Supplemental vitamin A palmitate was added at the following levels, per head daily, for the six lots of cattle: 0, 2,000, 4,000,

8,000, 16,000 or 32,000 U.S.P. units.

All levels of vitamin A fed increased average daily gain. Over a hot summer feeding period, control animals gained 1.52 lb. per day, whereas those fed supplemental vitamin A gained from 1.57 to 1.83 lb. per day.

Increasing the level of supplemental vitamin A increased average daily feed consumption proportionately. This effect was most noticeable during the hottest summer weather. Also, the cattle fed no vitamin A suffered more, physically, during the hot weather as evidenced by panting, as compared to the cattle receiving supplemental vitamin A.

The amount of vitamin A stored in the livers was directly proportional to the level fed in the ration. Those fed no supplemental vitamin A had a liver storage of 1.2 U.S.P. units per gram of liver while those fed the highest level of supplemental vitamin A had a liver storage of 52 U.S.P. units per gram.

Under the conditions of this trial, the highest level of supplemental vitamin A (32,000 U.S.P. units per head daily) gave best growth response.

2. LEVELS OF SUPPLEMENTAL VITAMIN A WITH AND WITHOUT SUN-CURED ALFALFA MEAL FOR FATTENING STEER CALVES—W. M. Beeson, T. W. Perry, M. T. Mohler and W. H. Smith—This trial was a "follow-up" of the first vitamin A trial reported above. Once again, cattle were fed a ration of 8 parts ground ear corn to 1 part of soybean oil meal, plus bone meal and salt. (This is not too different from the kind of ration fed in many feedlots, but it is one which will give typical vitamin A deficiency symptoms.) In addition to the 8 ground ear corn : 1 soybean meal, half of the lots received 10% sun-cured alfalfa meal replacing 10% of ground corn cobs in the ration. Levels of 0, 10,000, 20,000, 40,000 and 50,000 U.S.P. units of supplemental vitamin A were fed with the two types of ration described.

Steer calves fed the ration without sun-cured alfalfa showed a highly significant increase in daily gain (22%) from an intake of 20,000 U.S.P. units of vitamin A per head, daily (2.31 lb. vs. 2.83 lb. per day, gain). Higher levels of supplemental vitamin A did not improve the performance of the steers over the 20,000 U.S.P. unit intake. Feed efficiency was improved approximately 5% from vitamin A supplementation.

When steer calves were fed 10% of sun-cured alfalfa pellets, replacing 10% of ground corn cobs in the ration, vitamin A supplementation improved the daily gain, but the increases were small, ranging from 2 to 10%. These data would indicate the steers were meeting a portion of their vitamin A requirements from the carotene supplied by the alfalfa meal.

Substituting 10% of sun-cured alfalfa pellets for 10% of corn cobs increased the daily gain 18% (2.31 lb. vs. 2.76 lb. per day) when no supplemental vitamin A was fed.

3. THE COMPARATIVE VALUE OF PELLETED RATIONS CONTAINING 20%, 40% OR 60% HAY FOR FATTENING BEEF STEERS—T. W. Perry, C. H. Nickel, Donald Webb and W. M. Beeson—Four lots of steers were used in an experiment designed to study the value of pelleting rations containing three different levels of hay. One lot of cattle was fed a typical ration of 8 parts rolled shelled corn to 1 part of Purdue Supplement A. In addition, an equivalent of 20% long hay was fed. The rations fed to the other three lots were ground, mixed and pelleted into one-fourth inch pellets, and contained either 20%, 40% or 60% of hay.

Pelleting the 60% hay ration (60% hay, 40% corn and no Supplement A) resulted in gains of 2.16 lb. per day as compared to 2.26 lb. for those fed the high concentrate rate in the loose form. However, feed cost per pound of gain was 14% less (16.0 vs. 18.7¢) for steers fed the 60% hay pellet than for those fed the high concentrate, unpelleted ration. Furthermore, carcass grades were slightly higher and the selling price was the same for the 60% hay-pelleted ration compared to the steers fed the high concentrate, unpelleted ration.

Much research has been conducted in the field of pelleting over the past five years. However, most attention has been given to either an all hay ration or a high concentrate ration. Pelleting a high concentrate ration results in poorer gains and pelleting an all hay ration results in more rapid—but very expensive—gains. Research reported here used an intermediate level of roughage (60% hay) and resulted in equally as rapid gains, equal carcasses, equal sale price of the cattle, but a **14% saving in cost per pound of gain.**

4. VARIOUS RATIOS OF CORN AND CORN SILAGE IN THE FATTENING RATION OF BEEF CALVES—T. W. Perry, Donald Webb, C. H. Nickel and W. M. Beeson—Four lots of fattening steers were fed 2 lb. of Supplement A plus various combinations of corn and corn silage. Lot 1 was fed 1.5 lb. of ground shelled corn, in addition to the Supplement A, plus free choice corn silage. The other three lots were fed one third full feed, two-thirds full feed or a full feed of ground shelled corn plus Supplement A and free choice corn silage.

Economical gains were made in all lots of calves fed 2.0 lb. Supplement A, various levels of corn and free choice corn silage and minerals (12.4¢ to 16.1¢ feed cost per pound gain).

Most economical gain was made by the calves in Lot 1 fed 1.5 lb. corn in addition to Supplement A and corn silage (12.4¢), but these cattle did not gain as rapidly as those fed higher levels of corn. Also, their gains appeared to be more growing gains and less finishing gains than the cattle fed from one third to a full feed of corn. Yearling cattle can be fattened out satisfactorily on a full feed of corn silage, 2.0 lb. Supplement A and 1.5 to 2.0 lb. shelled corn. Calves apparently do not have the digestive capacity to eat enough silage to reach a market finish on such a program and thus require additional grain.

Calves in Lot 3 fed two-thirds full feed of corn actually gained most rapidly (2.46 lb. per day) of the lots compared. Calves fed a full feed of corn gained at practically the same rate (2.40 lb. per day), but the feed cost per pound of gain was 10% higher than those fed two thirds of a full feed (16.1¢ vs. 14.6¢ feed cost per pound of gain).

These data would indicate that a higher roughage ration can give just as rapid gains and considerably more economical gains than a higher concentrate ration.

Final evaluation of the research cannot be made until the cattle are marketed and carcass grades are obtained from the different levels of corn.

5. COMPARATIVE VALUE OF DIETHYLSTILBESTROL, DIENESTROL DIACETATE AND SMILAGENIN FOR FATTENING BEEF STEERS—Martin Stob, T. W. Perry, M. T. Mohler and W. M. Beeson—The search for new growth stimulants for beef cattle continues. One of the more logical fields to investigate is the field of hormones and hormone-related materials. It would be desirable to find a hormone-like substance which had the growth-stimulating effect of some of the sex hormones without the undesirable side effects of certain of them.

In this research, the effect of two levels of dienestrol diacetate (10 or 15 mg. per day) or of two levels of a steroid compound obtained from certain tropical plants—Smilagenin (10 or 20 mg. per day)—were compared with steers fed no hormone or those fed 10 mg. diethylstilbestrol (DES) per head, daily.

Ten mg. of DES, daily, resulted in a smaller than usual response in fattening steer calves of 6% (2.42 vs. 2.28 lb. per day); the feeding of dienestrol diacetate at 10 mg. level resulted in practically no increase in gain, and at a level of 15 mg. per day an increase of 3% was obtained (2.28 vs. 2.36 lb. per day).

Neither level of Smilagenin was effective in increasing the rate of gain.

6. ALFALFA HAY VS. TWO TYPES OF ALFALFA HAYLAGE VS. ALFALFA SILAGE, FED WITH AND WITHOUT SUPPLEMENT IN A FATTENING RATION FOR STEER CALVES—T. W. Perry, D. D. Cope and W. M. Beeson—Four methods of harvesting and storing a predominantly alfalfa crop are compared from a nutritive value in a corn fattening ration for beef calves in which the dry matter equivalent of the four products is the same in each lot (6.1 lb. per day). The four products tested are, hay (85% dry matter), Harvestore haylage (56% dry matter), open silo haylage (65% dry matter) and direct-chopped silage (36% dry matter).

The feeding of 2 lb. of Supplement A in addition to a full feed of corn and the respective roughage being tested resulted in an increase in daily gain of over a half pound per day (1.81 lb. vs. 2.38 lb. per day). This represents a 31% increase in gain. Cattle fed supplemental protein required 12% less feed per pound of gain. However, feed costs per pound of gain were quite similar and slightly in favor of the cattle fed no supplement (15.0¢ vs. 15.3¢). Cattle fed no supplemental protein are at least one grade lower in finish as of April 11, and it is doubtful if they will finish to a desirable market grade (U.S. Choice) without fortifying the ration with a well balanced supplement.

Chopped hay and Harvestore haylage have been comparable in nutritive value in supplying the roughage portion of corn fattening ration, either with or without supplemental protein. Rate of gain is quite similar (2.24 lb. vs. 2.26 lb. per day); similarly for feed efficiency (7.99 lb. vs. 8.18 lb. feed per lb. gain) and for feed cost per lb. gain (14.1¢ vs. 14.5¢ per lb. gain).

Haylage stored in an open top concrete silo was inferior to hay or Harvestore haylage, when fed either with or without supplemental protein. Difficulty was experienced in being able to feed the open-silo haylage rapidly enough to keep ahead of some spoilage. These cattle would not consume the amount of corn per day that was the case for cattle fed hay or Harvestore haylage.

Without supplemental protein, silage that was direct-chopped and stored without a preservative was the poorest of the four methods of storing the alfalfa crop. Corn consumption was lowest for this group and more difficulty was experienced in keeping the cattle "on feed." However, when 2 lb. of Supplement A was fed the cattle grew well and actually had the highest average daily corn consumption (13.4 lb.) of any lot. The greatest contrast of feeding no supplement or of feeding supplement was shown in the silage groups (1.32 lb. vs. 2.38 lb. per day gain).

7. THE COMPARATIVE VALUE OF MATURE AND OVER-MATURE CORN SILAGE, ALFALFA HAY, TWO TYPES OF ALFALFA HAYLAGE AND ALFALFA SILAGE FOR GROWING BEEF CALVES—T. W. Perry, M. T. Mohler and W. M. Beeson—Corn silage cut at the "mature" stage when the kernels are dented and glazed, but before the stalk has changed in color from green to brown, appreciably, proved to be superior to corn silage cut at a later stage of maturity. During the first phase of the experiment, dry matter consumption of the two types of corn silage was similar (8.6 lb. vs. 8.9 lb.). However, during the second phase of the experiment, cattle on the mature silage consumed almost 3 lb. more of dry matter per day (11.9 lb. vs. 9.1 lb.) from their silage than was the case for the steers on the over-mature silage.

Feed costs per pound of gain for gains of from 2.04 to 2.68 lb. per day, ranged from 10.3¢ to 13.6¢ on the two types of corn silage. This is further evidence of the versatility of corn silage in fitting into lowered cost patterns for beef production.

The addition of 3 lb. of rolled shelled corn and 1 lb. of Supplement A to hay, haylage or alfalfa silage resulted in quite satisfactory growing gains of from 1.55 lb. to 1.84 lb. per day at feed costs of from 11.3¢ to 16.2¢ per pound of gain. Apparently a small amount of supplemental protein plus some energy was necessary to convert these four products into a balanced ration capable of supporting good growth.

Supplemented alfalfa silage and Harvestore haylage supported more rapid gains at lower feed costs than hay or than haylage stored in an open top concrete silo.

The haylage stored in the concrete silo lost more moisture during storage and was lower in carotene content (0.06 mg. vs. 2.2 mg. per lb.) than the haylage ensiled in a Harvestore.

8. LYSINE, METHIONINE ANALOG AND TRACE MINERAL ADDITIONS TO A 64% PROTEIN-UREA SUPPLEMENT FOR FATTENING BEEF STEERS—W. M. Beeson, T. W. Perry, W. H. Gossett, M. T. Mohler and M. P. Plumlee—The research continues to try to unlock the secrets of how to fortify a high-urea supplement and make it nutritionally equivalent to a supplement containing natural proteins for beef cattle. In previous research, it appeared that the addition of a small amount of lysine (10 gm. per head, daily) was a step in the right direction. However, in the current research, the addition of the amino acid lysine to the 64% high-urea supplement (14.6% urea) at either the 5 or 10 gm. level per steer daily did not improve average daily gain. Steers fed the 32% supplement (Purdue Supplement A) at 2.0 lb. per day, gained significantly faster (2.72 vs. 2.32 lb. per day) than those fed 1.0 lb. of the 64% supplement.

An amino acid-related material, methionine analog, fed at a level of 5 gm. per day was without effect on the gain of steers fed the high urea supplement, but a level of 10 gm. per day significantly depressed growth rate.

Trace mineral fortification was without effect on daily gain. This would indicate the rations fed were adequate in manganese, iron, copper, cobalt, iodine and zinc.

HESS & CLARK

(Continued from page 7)

ers, dealers, extension poultrymen, breeders, hatcherymen, poultrymen, poultry publication editors, equipment manufacturers and others questions about the FPI program.

Surveyed poultry publication editors, breeders and extension poultrymen generally endorsed the FPI program as a sound management guide for poultrymen, Hess & Clark officials reported.

Through interviews and a mail survey, feed manufacturers and dealers in 11 states related their results with FPI as a promotion idea for selling layer feeds. Hess & Clark reported that of 1,100 dealers surveyed, 60½% of those answering reported increases in sales of nf-180 medicated feeds, and 55.7% reported direct farmer inquiries from Hess & Clark advertising.

In a mail survey of farmers who have tried nf-180 medicated feed, 88.2% reported that they were "well satisfied" and planned to continue its use, according to Hess & Clark.

Mr. Eshelman said a sound-slide strip film is being prepared for distribution in June, highlighting the survey's findings. The film will be available for showings to feed manufacturers, dealers and poultry servicemen, and will outline the promotion and merchandising aids which will be available from Hess & Clark.

MARKETS

(Continued from page 2)

tight supply and all indications point to higher prices.

Most of the major feed ingredient buyers continue to buy their ingredients on an as-needed-basis in hopes of lower prices. Although citrus processors have reduced their prices on citrus pulp hoping to stimulate some demand, they were not very successful as the movement is about unchanged.

Central States

During the closing week of the month, volume of trade in commercial mixed feeds has been holding up quite well and just about everyone have been quite well satisfied with what has been moving. Not much in the way of overtime being put in but shipping directions have been holding up well with most plants having a couple of days backlog to keep things humming.

Growing concern, however, is being expressed on account of the almost general upturn in constituent feeds. For the bulk of the past five or six weeks during which soybean oil meal has been on a rampage, the latter was leading everything else. As a matter of fact, the other feeds have been actually lagging badly on bean meal. However, this week, it's been a different story and about the only item on the list that failed to move higher was red dog.

All of this is stirring up fears of running into consumer resistance on account of the inevitable price hoist on different mixed feed lines. Both linseed and cottonseed meals showed good healthy advances this week, indicating more of an inclination to follow the pattern set by bean meal. With broilers held at around 13½¢ lb. and soybean meal at 4½¢ lb., the feeding ratio leaves much to be desired from the standpoint of broiler plant operations and there could well be some backing away on their part from such a relatively high priced feed.

Ohio Valley

Following a month of unseasonably cold weather, with temperatures ranging well below freezing almost every day, there was a sharp reversal this week, when the mercury soared well above 80 to set new records. While hay and other meadow crops responded immediately, farmers have been able to plant only minimum acreages of corn and other crops because of continuing heavy showers which have made field work impossible. As a result, planting is far behind schedule and several weeks of drier weather will be required for completion of this year's planting season.

But every cloud is said to have a brighter side, and this spring it has been the excessive rainfall which has created record underground water table levels that are expected to greatly lessen the customary threats of drouths during the mid-summer months.

The advent of warmer weather also has had a decidedly beneficial effect on sales of all types of manufactured feeds, especially the chick starter and turkey feeds. While there have been no reports of overtime work in valley plants, many of them have found it necessary to recall considerable numbers of employes, with indications that this happy situation will continue through the spring season at least.

South Central

Feed manufacturers have had a relatively satisfactory sales volume this week, but there are no reports of impressive increases in tonnage. Operations generally hold to a five day capacity basis, although several plants have needed minor amounts of overtime to keep pace with sales.

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Hog feed business is holding at a good rate and a steady increase in volume is taking place in pig starters and growers. Chick and turkey starter ration sales are expanding, with peak outgo still several weeks away. Improved carrying capacity of pastures is a factor in the reduction of cattle and dairy feed demand.

Another increase in formula feed prices is in store for this weekend. Fortunately for the trade, some feed manufacturers pushed money saving booking plans early in the month with an excellent acceptance. One feed man says he gets almost as many complaints from his dealers over their own lack of foresight in not taking larger bookings than he does about the higher trend of feed price lists.

Pacific Northwest

Oregon, Washington and Idaho formula feed movement was pretty well maintained this week with the various poultry feeds still showing the most action.

There continued to be more additional producer concern over declining feed ratios. However, on the bright side was the fact that Portland egg prices gained 1¢ doz. at the producer level during the week, with AA large eggs bringing 32-36½¢ and A large valued at nearby country points at 30-32¢.

Frying chicken prices are still considered rather low at 16½-20½¢ lb. when picked up at the ranch.

Pacific Northwest sheep producers were cheered by the report from North Portland that old crop lambs this week sold $1 cwt. higher at the Pacific Northwest's largest livestock market, with choice and prime shorn old-crop lambs bringing $15.50-16 compared with an $18.50-20 price for the same grade of spring lambs.

Cattle prices held unchanged this week at North Portland, while butcher hog prices were steady to 50¢ cwt. lower under a $19.25 top.

Mountain States

Feed dealers in this area report they are becoming quite concerned over the rising prices of fish meals, meat scraps and oil meals.

Feeders are showing a reluctance against the rising price trend in these feeds.

Poultry feeding still seems to be picking up, but cattle feeding is showing a downward trend as spring and grass ranges open up. Feed prices generally seem to be stronger and rising, but volume for this time of year is somewhat downward.

Asked why prices are rising on some of the feed items, dealers report that in some cases supply is short and demand strong, but government activity also has had its effect.

Southern California

This was convention week in California and many of the feed dealers in the southern California area attended the San Francisco meetings, creating a lack of market information.

Most of California received some moisture during the week, but unfortunately only limited amounts of rainfall came to southern California.

Feed mill production continues brisk with everyone operating one or two shifts five days per week. However, new problems to the poultry and broiler industry could be in the making with higher feed costs and lower egg and broiler prices. Of course, the real problem is finance; can the customer continue prompt payments?

Local fryer producers have lost nearby markets to the southern and midwestern producer. Our southern California price of about 15¢ lb. remains low, but this soft market apparently is much better than the 13¢ lb. level being experienced in the Southeast. Thus larger shipments from these other geographical areas are moving in this direction.

Proteins including soybean meal, fish meal, cottonseed meal and meat scraps all remain very strong and have caused increased feed prices throughout our territory. Milo and corn advanced 6-8¢ cwt. within the week to cause concern among poultrymen and feed dealers.

The dairy business continues steady with most dairymen satisfied with current returns. Each year the area experiences a surplus milk problem, but no complaints have been heard recently.

Much of the Imperial Valley barley crop appears in excellent condition and harvesting should be underway early in May.

+++

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